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Consumers' Research Bulletin

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Consumers' Research Bulletin

OFF THE EDITOR'S CHEST

WHEN A GROUP of commercial fur raisers in New York, Pennsylvania, and Illinois claimed damages to the extent of more than $268,000 for thousands of mink that were never born, the matter was the subject of hearings by the House Judiciary Subcommittee. According to the newspaper account, the mink raisers had used poultry waste as food for the animals, on the recommendation of the U. S. Department of Agriculture. It turned out, however, that hundreds of poultry farmers, also acting on the recommendation of the U. S. Department of Agriculture, had injected pellets of stilbestrol, an artificial hormone preparation, into the necks of poultry in order to increase weight and tenderness of the birds. Minks consuming this feed became sterile.

The mink's failure to reproduce offspring when fed on parts of chickens that had been treated with the synthetic hormone quite naturally aroused some concern among potential *human* consumers of poultry that was so treated. As Consumers' Research pointed out in April 1944, when the new use of this drug discovered by a California professor of poultry husbandry was given publicity, no one at that time indicated what would be the *possible effect on the consumer* of eating the meat of stilbestrol-treated chickens. As a matter of fact, the U. S. Department of Agriculture was reported in June 1951 as taking the position that human beings would not be harmed by eating fowl so treated. It may reasonably be doubted that consumers can safely rely upon this assumption of the Department of Agriculture. A newspaper account of the mink raisers' unhappy experience further indicated that the U.S.D.A.'s defense was that it should not be held responsible since it had not anticipated the use of hormone-treated chicken parts in mink feeding. The incident served to dramatize the hearings into the widespread use of new and unfamiliar chemicals in this country's food supply by the House Select Committee to investigate the use of chemicals in food. The various chemicals used in food were classified as pesticides and insecticides, chemicals used as preservatives, mold inhibitors, emulsifiers, and other agents added during food processing, chemicals used to wash utensils in food production, and various coatings used in food packaging.

Whether the problem is one that can be dealt with effectively by a Congressional Committee is open

(*Continued on page 25*)

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¶*CR will, of course, gladly change addresses for men and women in the services as often as required by changes in station and other circumstances.*

★★★For a brief cumulative index of 1951 BULLETINS preceding this issue, see page 24.

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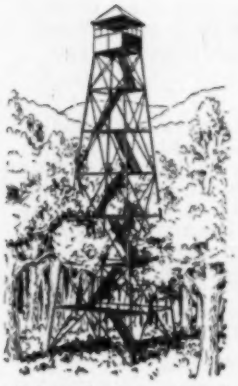


The Consumers' Observation Post

THE CLAIM that three out of four people in this country are so deficient in their intake of vitamins and minerals that they have developed symptoms of fatigue, of being under par, underweight, or nervous, as alleged in advertising for Ovaltine is false. Recently the Federal Trade Commission issued a ruling condemning such health claims and a number of others made for Ovaltine. The comment was made that the present extent of undernutrition has not been accurately determined and the "present state of knowledge of nutrition does not permit an accurate statistical statement of the specific percentage of people in the United States who are undernourished." That would seem to dispose officially of that famous remark about "one-third" of our nation being "ill-fed," as well as the Ovaltine claim.

* * *

THE SUPPLY OF NATURAL GAS is expected to run short this winter. At least that possibility is reported by The Wall Street Journal to be worrying federal fuel men. It appears that installation of gas-burning equipment in both homes and factories has outstripped pipe-line distribution, and building of new pipe lines has been held back by the shortage of steel pipe. It is hoped that the winter will be mild, in order to prevent closing of factories making civilian goods and munitions. Home owners planning to install new heating plants or cooking facilities will do well to keep the situation in mind in making their choice of fuel.

* * *

INTERFERENCE IN TELEVISION RECEPTION may be caused by the presence of over-age filament lamps of the obsolete straight-wire vacuum type somewhere around the house, according to a study made by John H. Campbell and H. E. Schultz of the General Electric Company, Nela Park. Although lamps of this type for home lighting have not been manufactured since 1925, there are apparently quite a number still in use. In the vicinity of a television receiver they have caused sustained oscillations that could be picked up by the television antenna or unshielded parts of the receiver. Since the outdated bulbs are likely to be used infrequently, and in such locations as the attic, fruit cellar, or garage, the serviceman may not be able to detect them as a cause of trouble. Furthermore, he may not have been alerted to their being a possible source of TV interference troubles. The interference is described by Hans E. Hollmann of Oxnard, California, as a "peculiar kind of Barkhausen-Kurz or 'electron dance' oscillations."

* * *

AN UNUSUAL HAZARD from the use of gum laxatives was brought to the attention of the medical profession by Dr. C. L. Hinkel, Danville, Pa., in a recent issue of the Journal of the American Medical Association. The patient, a man of 75, was accustomed to taking Serutan, described as a bland hydrogel derived from Plantago ovata and extracted sugar beets, which owes its laxative properties to its gelatinous, spongy character and its ability to absorb liquid, thereby increasing in bulk. In the particular case in question, the patient had placed two teaspoonfuls of dry Serutan in a cup and swallowed half of it, washed down with only a few sips of water. Then he swallowed the rest, washing it down with the remainder of a glass of water. Subsequent discomfort was so great that he was taken to a hospital. His symptoms included pain in the chest, a feeling of "bursting," and inability to swallow. A roentgenogram of barium in the esophagus indicated complete impaction. Proper medical treatment removed the material and the symptoms disappeared. Although Dr. Hinkel pointed

out that the case was unusual, he also suggested that it would be wise to warn patients who use Serutan or similar substances that they should drink copious amounts of water to wash such laxatives into the stomach quickly before impaction could occur in the lower esophagus.

* * *

CHRISTMAS TREE ORNAMENTS and tree lights made of plastic have improved considerably in the past few years. The chief danger has been one of fire hazard from the use of pyroxylin or cellulose nitrate, warns the National Board of Fire Underwriters. Several years ago when the N.B.F.U. had occasion to make tests of plastic Christmas tree ornaments, it found that many were unsatisfactory in use; some softened and distorted when subjected to heat from light bulbs; others gave off smoke-like vapors; and some darkened and appeared to char. In August 1951 the National Bureau of Fire Underwriters, in response to CR's query, replied that they had had no recent complaints about plastic articles, but pointed out that there might be some danger from imported ornaments, which might be made from the flammable pyroxylin or cellulose nitrate.

* * *

THE LIFE OF CUT FLOWERS can sometimes be extended by the use of preservatives. In a test of tea roses with stems cut at an angle with a sharp knife, the flowers were put in vases containing the recommended concentration of cut flower preservative, in one in which a five-grain aspirin tablet had been dissolved, and in plain water. At the end of three days, the chemist conducting the experiment reported that the roses in the aspirin solution were completely ruined and those in plain water were badly wilted. The flowers in the solutions of Floralife and Bloomlife were still in good condition. The effectiveness of the preservatives was found to be more marked with longer-lasting flowers such as carnations.

* * *

FLUTED SKIRTS have sometimes been sold with the claim that the fluting is permanent and will not come out when the garment is dry cleaned. It is possible to dry clean such garments, but special handling is required, cautions the National Institute of Cleaning and Dyeing. According to one of the technical bulletins of the N.I.C.D., fluting is a form of ornamentation in which the fullness of a fabric is arranged in even rolled grooves, instead of being pressed flat as in pleating. The N.I.C.D. bulletin describes the precautions dry cleaners must use when handling such materials. Consumers should expect to pay an extra charge for the cleaning service, since whatever the claims made by the manufacturer of the garment, it represents a more difficult cleaning job than a garment with a plain skirt.

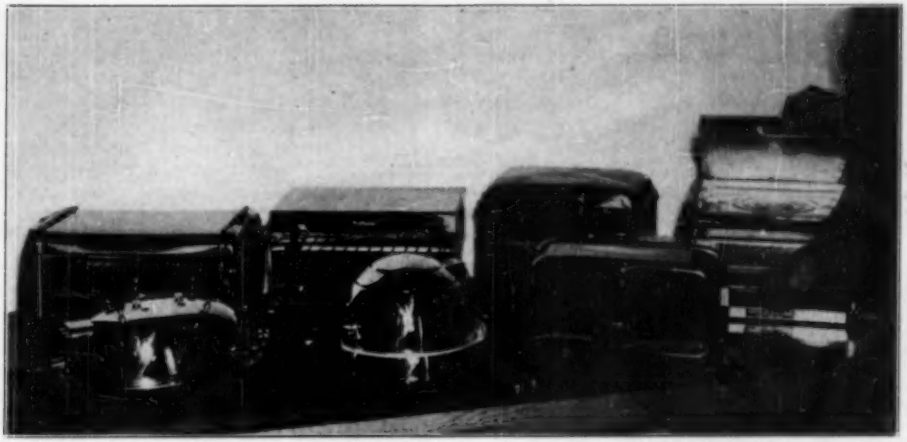
* * *

RECLAIMING THE SOIL in old apple orchards presents something of a problem in certain sections of the country where arsenic sprays have been heavily used. In Delaware, for example, growers have had trouble with certain crops because of the arsenic from spray materials that have collected in the soil, warns Professor G. M. Gilligan of the Delaware Agricultural Experiment Station. He advises that the arsenic damage can be mitigated by adding iron or zinc salts, including organic matter with farm manure, or by growing green manure crops such as rye. We hope that this little item will come to the attention of those who in the 30's pooh-poohed our warnings of the dangers from the use of lead and arsenic sprays, not only to the health of human beings who ate the fruit, but with respect to continuing and increasing contamination of the soil on which the sprays fell.

* * *

FOR RAPID RECOVERY FROM SURGERY, it is important that the patient in most cases be given a high protein diet. It has been noted also that patients who receive adequate nutrition from the beginning of their disease have shorter convalescent periods than patients who are inadequately nourished over an extended period, report Dr. Herbert Pollack and Dr. Seymour L. Halpern of Mt. Sinai Hospital, New York City, in the Nutritional Observatory. These two physicians estimate that most sick and injured individuals require at least 150 grams of protein per day and larger amounts may be necessary if the patient

(The continuation of this section is on page 29)



The broilers tested by CR, showing the two different designs, i.e., the open-front type and the inverted-bowl type. ***Back row:*** *Broil-Quik, Holliwood, Ritz, Broil-O-Grill.* ***Front row:*** *Farberware, Manning-Bowman, Broilking.*

Electric Table Broilers

ELECTRIC TABLE BROILERS are sold in two distinct shapes, the familiar circular "bowl" type and the rectangular "open" type. The bowl type is substantially an electric heating unit set in a hollow shell which is inverted over a base containing the food to be broiled. The open type has the heating unit in the top of a rectangular-shaped shell, of which the side toward the user is open. A tray, on which the food is placed, slides under the heating unit. Most of the heating units used in the broilers tested were of the type having exposed coiled resistance wires set in ceramic blocks, similar to those used in electric table stoves.

For the established household with a satisfactory cooking range, there would seem to be little use for a "table broiler." The designation is a misnomer in its implication that the broiler is well suited for use at the dining table. Actually, when used for broiling meat, the broilers smoked too much to be acceptable at table, and some of the open type were especially bad in the way they spattered grease to the table top and to the user's clothing; some radiated sufficient heat energy to heat the table top to a temperature which might often damage a varnished surface.

The almost universally high temperatures of the tray handles, plugs, and metal shells indicate a very definite probability of accidental burns. Only the *Manning-Bowman* and the *Farberware* handles were comfortable to the touch while the broilers were in operation. Temperatures of parts likely to be

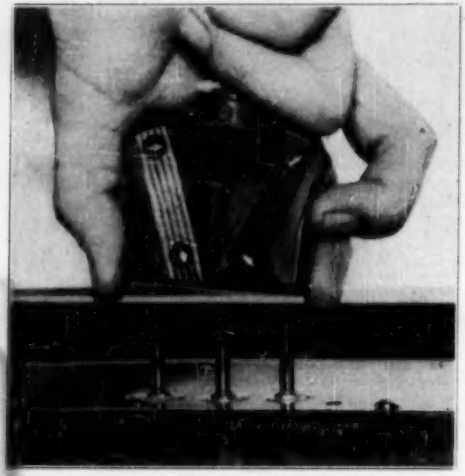
Table-Top Temperatures, °F

	In Front of Broiler	Under Broiler Body	
		Tray In	Tray Out
Broilking	217	127	156
Broil-Quik	221	82	93
Farberware	82	175	*
Holliwood	176	100	112
Manning-Bowman	78	115	*
Ritz	176	87	125
Super-Star	196	101	117

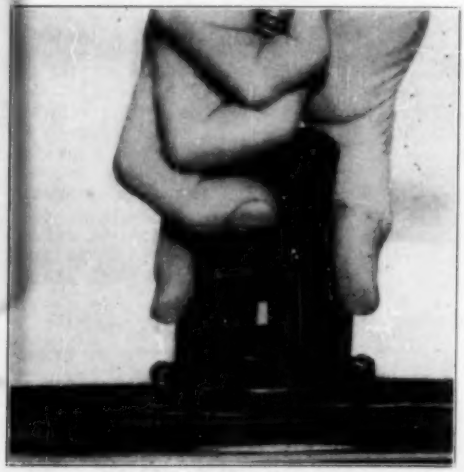
*Bowl type, having no movable tray.

The temperatures given are those obtained in the test. The Underwriters' Standard for Electrical Heating Appliances permits a temperature of 302°F on a supporting surface. So high a temperature was not reached with any of the broilers, but several exceeded what would be considered a safe range for dining table tops, from the standpoint of injury to the finish; perhaps 150° is as high as could be tolerated for repeated exposures.

touched should not exceed 130°F for metal, 150°F for materials other than metal. Each broiler had some defect in design or construction; a few of these defects were handles which became burnt and blistered in use, legs that were not firm or firmly secured to the base, and the use of unsafe wiring details. A very serious fault was present in the *Holliwood* broiler in that it lacked the safeguard (see photographs) which should be provided to prevent accidental contact of fingers with the terminal pins when attaching the appliance plug to the broiler. This is an old fault of electrical table and kitchen appliances, and one wonders why manufacturers have not learned long since how easy it is to avoid the hazard in their designs.



Unguarded terminal pins can be touched while attaching cord plug, presenting hazard of an electrical shock, which could be fatal.



A guard, when properly designed, prevents fingers from touching electrically-live terminal pins.

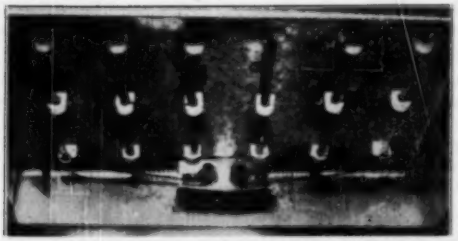
Besides the examination of constructional details, various tests were made; these included electrical leakage, the over-voltage or electrical breakdown test, fire safety, table-top temperatures (in front and beneath the broilers), heat distribution at the cooking surface, current consumption, rate of heating, temperatures of surfaces of broiler and cord set, and actual cooking tests.

The electrical leakage tests, to determine possible shock hazard, were made (a) at room temperature as received, (b) after exposure for 48 hours to conditions of 85 percent relative humidity at a temperature of 85°F, and (c) at the temperature attained while the broiler was in operation. All the broilers were found to have satisfactorily low leakage current under all three conditions. The user of a broiler such as these should bear in mind that the accumulation on the unit of any residue from broiling or other cooking operations increases the probability of electrical leakage, and hence the hazard of shock. For that reason it is important that broiler units be cleaned well after use; cleaning will be most conveniently done on heating elements that can be removed as a whole. As with a number of other appliances, it is dangerous to use an electric table broiler or stove within reach of water, heating, or gas pipes or some grounded fixture or appliance in the kitchen such as a sink, stove, or lighting unit.

Breakdown tests, at 900 volts, were made on the broilers as received and at the temperatures attained while in operation. No failures occurred at the room temperature condition, but the *Holliwood* broiler failed in this test when at operating temperature.

In the test for possible fire hazard, a double layer of dry, clean cheesecloth was placed beneath each broiler, resting on a wooden-top table, and the broilers were operated for an hour. None of the broilers scorched the cheesecloth, either under or in front of the broilers; however, most produced a sufficient rise in table-top temperature to be a hazard to the finished surface.

It was found that the distribution of heat in the open types of broilers was inherently non-uniform since radiation escapes at the front and is reflected at the rear. The *Broilking* gave the most uniform heat of the open-front broilers. The *Holliwood* was quite cool at the front, and the *Farberware* and *Ritz* had central hot spots. *Manning-Bowman* had a very uniform heat pattern. The broilers would serve well enough for persons who like their meats cooked "well done," and they would cook properly food such as pork chops which must of necessity be well done, for safety. None of the broilers was



It will be safest to avoid a heating unit of the design pictured on the left (found in Broil-Quik), having bare terminal leads and exposed resistance wires. A design similar to the one on the right is much safer (wire terminals better protected from accidental contact).

found to produce a properly browned rare steak or hamburger, with the outside dark brown and the interior red or pink, though two were fairly good in this respect.

Typically, the broilers, tested on a one-inch thick sirloin steak, cooked the meat too slowly and hence poorly, so that instead of being brown on the surface and rare in the middle, it was pretty much the same all through — a stewed quality that steak fanciers would find entirely unsatisfactory, although some consumers might not consider it objectionable. (This is not solely a matter of appearance but involves flavor also.)

The two broilers in the test which broiled steaks in a manner most like those that can be prepared with the best gas or electric range broilers were the *Farberware* and the *Ritz*. All but the *Manning-Bowman* held six normal-size pork chops.

Cord sets were furnished with all broilers. Only the *Broilking* had the Underwriters' Laboratories' label marked on the broiler, but the instruction booklets of the *Broil-Quik*, *Manning-Bowman*, and *Ritz* stated that the broilers were so approved.

Broilers are being offered at sharply cut prices by New York City "discount houses," indicating their vogue may be waning. The *Superstar*, *Broil-Quik*, and *Black Angus*, for example, were advertised at prices about 45 percent less than list.

Greatest weight in the rating was given to minimum electrical hazards, design making for easy cleaning, and even heat distribution. In view of the general unsuitability of the devices for use at the dining table, none was judged worthy of an *A* rating. In the listings measured power input in watts appears in parentheses after rated power.

B. Intermediate

Farberware, Model 430 (S. W. Farber, New York City) $26.95. Bowl type. Oval well with "tree" on bottom. 9¼ x 13¼ in. Wattage, 1100 and 200 (1045 and 190). Well made. Element readily removable. Broiler easily cleaned. Tray handles became too hot to touch. Heated rapidly, but heat distribution was not fully satisfactory (heated area too small). Shell temperature exceeded 600°. One of the two best broilers for broiling steaks. Cover was too heavy and hence was deemed awkward for average woman to handle with one hand, but only one handle was provided. **2**

Manning-Bowman Table Chef, Model 1500 (Manning, Bowman & Co., Meriden, Conn.) $19.75. Bowl type, 9½ in. diameter. Wattage, 800 (850 and 310). Had smallest capacity and lowest wattage element of broilers tested but had very even heat distribution and heated fairly rapidly. Element removable by removing one screw. Broiler easily cleaned. Temperatures of handles were low, but shell or housing became very hot (over 680°). When cover was raised during broiling, puff of steam was emitted at the operator's hand. Not considered good for steak cookery — see text. **2**

Broilking Citation, Model 800 (International Appliance Corp., 222 Fifth Ave., New York 1) $32.95. Smallest broiler of the open type tested. Tray, 7¾ x 11½ in. Wattage, 1400 (1470). Well made. Element removed by loosening two wing nuts. Guides, tray, and trivet plate enameled and easily cleaned. Tray handle could be removed to prevent heating while broiler operates. Rate of heating was slowest of broilers tested. Heat distribution pattern, good. Table top became too hot. Temperature of shell or housing exceeded 500°. Not considered good for steak cookery — see text. **3**

C. Not Recommended

Broil-Quik, Model B (Broil-Quik Co., 2330 Fifth Ave., New York 35) $35.95. Open type. Tray, 9¼ x 13½ in. Wattage, 1500 (1550). Element of type with exposed resistance wires, not removable. Broiler difficult to clean. Heated rapidly but somewhat unevenly. Plastic handle was severely damaged by heat. Table surface on open side became hot. Element, as received, was partially shorted and loosely installed, making future short circuits likely. **3**

Hollywood, Model 90 (Finders Mfg. Co., 3669 S. Michigan Ave., Chicago 15) $32.50. Open type. Tray, 9¼ x 14 in. Wattage, 1320 (1415 and 830). Housing was not rigid, and brackets of supporting feet could be bent rather easily. Element of type with exposed resistance wires, not removable. Broiler easily cleaned except around heating element. Heated rapidly but heat distribution was not fully satisfactory. Failed proof-voltage test when at operating temperature. Wire between terminal pin and heating element failed (burned out) during test. Shell temperature exceeded 400°. Terminal pins unguarded (see text). **3**

Ritz Black Angus, Model 27 (Marlun Mfg. Co., Inc., 22-28

W. 21 St., New York 10) $34.95. Open type. Tray, 9¾ x 12¼ in. Wattage, 1350 and 450 (1475 and 395). Well made. Element removable, with some trouble, but there was clearance enough that unit could be cleaned, with some difficulty, without removing the element. Heats fairly rapidly, but heat distribution only fair. The design was so bad that the handle of the tray became charred in use. Shell temperature about 500°. Supporting legs could be bent easily. Terminal pins not very well guarded. **3**

Superstar Broil-O-Grill, Model 75 (Stern-Brown, Inc., 42-24 Orchard St., Long Island City, N.Y.) $39.95. Open type. Tray, 9 x 12¼ in. Wattage, 1400 and 700 (1360 and 695). Well made, except that element was of a type with exposed resistance wires, not removable. Broiler difficult to clean. Had additional cooking surface under hinged top. Handle and plug became too hot to touch. Broiler heated rapidly and quite uniformly. Table top, in front of open side, became warm but temperature was within safe range. Shell temperature about 300°. Terminal pins not very well guarded. **3**

Two Low-Priced Microscopes

CONSUMERS' RESEARCH has recently had the benefit of a consultant's examination of two low-priced 200-power microscopes. These are among the many products widely advertised by small mail-order firms which typically advertise in the Sunday newspapers and in popular magazines read by home experimenters and hobbyists.

One of the microscopes bought from the Andrew Technical Service, 3805 N. Clark St., Chicago, at $19.75, carries a paper label reading Monroe Gasket & Manufacturing Co., Rochester, N.Y. The weight of the instrument is 5.2 lb. This microscope is a good-sized, though inferior imitation of the conventional medical microscope (necessarily much inferior, in view of its far lower price). The focusing device is similar to that in a regular microscope, and on the new instrument moved the lens tube up and down satisfactorily. The stage is 4 in. square, made of plastic material, and has stage clamps. A glass slide, on which the leg of a honey bee was mounted, was furnished. The metal stand, height about 11 in., is well constructed, of good quality, size, and balance, and has a black crackle finish. The optical system is inferior and would tire the eyes of a critical observer after only a few minutes' use, and quality of image and definition of the optical system were not satisfactory. The stand and general makeup of the Monroe were superior to those of the microscope next to be discussed.

The second microscope, available from Stanley Optical Co., 574 Fifth Ave., N.Y.C., at $13, plus postage, was imported from France but name of the manufacturer was not indicated. Its general design copies that of the widely used medical monocular microscope, but on a much smaller scale, as may be judged from the 11 oz. which this microscope weighs. The tube carrying the lenses is held by friction so that it may be slid up and down by the fingers. The stage is of metal, and stage clamps are provided. Focusing is done by turning a knurled ring above the objective, which raises and lowers that lens. The stand has the usual horseshoe-shaped base, and is of metal with black crackle finish, about 5 in. in height. The optical system, though not of first quality, is better than one would expect to be available in a $13 microscope, and the price seems very reasonable considering the fact that a good *hand lens* having a flat field, at much lower magnification, costs about $12.50. The magnification was reasonably close to the advertised 200 diameters. The image was clear, brilliant, and fairly sharp except for some noticeable color fringes at the margins. The color aberration is considerably worse than in the optics of the Monroe, but some concern should be given to the possible eyestrain which would follow if the observer looked long and intently through the optical system of either of these instruments. For short-time work, CR's consultant found the Stanley better in this respect than the Monroe despite the color aberration present in the Stanley. The field of view is slightly more than one millimeter (1/25 in.) in diameter, approximately the same as that covered by a regular, expensive microscope used by professionals. The utility of the instrument is decidedly limited by the fact that only one set of lenses is available. Five slides were furnished, on which pollen, crystals, and stained tissues were mounted for examination. The resolution test indicated that the microscope will show distinctly lines which are ruled 5000 to the inch, which indicates that reasonably fine detail can be observed. (A good-quality instrument should have resolving power about twice as good as this, and the extra resolution would be necessary for serious or critical microscopy.) The Stanley would be acceptable to one who would be content to examine everything at 200 diameters, and it would be an acceptable gift to a youngster who might be interested in microscopy.

Both of the microscopes fall within the range of quality expected of toys, and they would not be acceptable in any sense to the serious microscopist. A child would take much more pride in the Monroe because of its larger size and its having less the appearance of a toy. On the other hand, if either of these microscopes is bought for a child, it might be well to see that he does not work with it for too long a time, because of the poor optical system. For consideration as toys, the instruments are both rated *B*; if considered for serious microscopy, they would be given a *C* rating.

Men's Shirts

White Cotton Dress Shirts

Nothing annoys a man more than a shirt that doesn't fit. Incorrect size and poor fit were mentioned by over half the men who complained about dress shirts, in a survey made by the Bureau of Agricultural Economics. The most frequent criticism had to do with sleeves of the wrong length, tails that were too short, and poor fit of the shirt body.

A test of men's white dress shirts just completed by Consumers' Research showed that these men had something to complain about. Although the collar measurements of all 20 shirts tested corresponded with the marked size (within the tolerances allowable), and, indeed, in most cases showed that an oversize allowance had been made, one or both sleeves were too short on the *Arrow*, *Brent Tacoma*, *Manhattan*, *Pelham*, *Shirtcraft*, and *Tru Val* shirts — over one-fourth of the brands tested. This is hardly reason for going back to the long sleeves and arm bands that were the style before standard sleeve lengths were introduced in 1911, but certainly there is need for improvement in manufacturers' control of sleeve length.

Only one of the shirts tested, the *Bond*, met all the size measurement requirements of Commercial Standard CS 135-46. This standard gives minimum measurements (governed by collar size) for five parts of a shirt: circumference of the chest, lengths of the front and the back, length around the armhole, and width around the sleeve. Some shirts fell below these requirements in one or two measurements or more; one was too small in all five measurements. Eighteen of the 20 shirts were too short. The Commercial Standard, it should be noted, was established by consent of the industry, and its provisions may thus be presumed to represent the will of interested trade groups. At one time, it was stated that inexpensive shirts might fail to come up to the standards; now it would appear that skimping, particularly in the lengths of the front and back, is quite common, and not at all limited to cut-price shirts.

Fortunately, control of fabric shrinkage by the Sanforizing process has largely eliminated excessive shrinkage of shirts during laundering. None of the 20 shirts tested had more than about one percent shrinkage when laundered at 160°F temperature (commercial laundering). The short shirttails would not get much, if any, shorter with laundering.

In CR's tests, fabrics were examined for fineness of construction (based on thread count) and were judged on evenness, cleanliness, and general appearance. The fabrics of most shirts had a good appearance, but eight were judged only fair. One of the shirts, the *Pelham*, was made of Oxford cloth; all others were of broadcloth. Most of the broadcloths were fine, closely woven, durable fabrics that would launder well; three, in the *Bean*, *Bond*, and *Pilgrim DeLuxe* shirts, were finer than most. Five shirts, *Brent Tacoma*, *Mohawk*, *Shirtcraft*, *Tru Val*, and *Yale*, were made of fabrics that had fewer yarns per square inch and were also not so strong as the closely woven fabrics; two fabrics, in the *New Yorker* and *Pilgrim* shirts, were fairly coarse. All the shirt fabrics, however, were strong enough to be judged serviceable.

Poorly finished buttonholes and other poor workmanship play an important part in the nicety of a shirt finish. The stitching of all the shirts tested

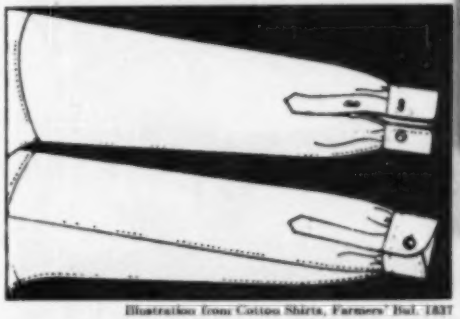
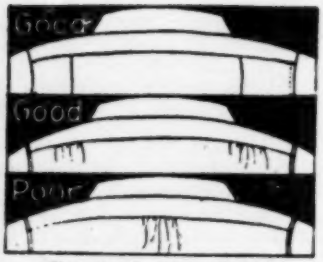


Illustration from Cotton Shirts, Farmers' Bul. 1837

Sleeves made in one piece are of better quality than pieced sleeves.



Illustrations from Cotton Shirts, Farmers' Bu . 1837

The construction of the yoke, shoulders, sleeves, and cuffs plays an important part in the appearance of a shirt.

was good, but the workmanship of eight shirts was judged only fair principally because of uneven seam joinings and loose ends of stitching thread. Most shirts had well-made buttonholes; five had "fair" buttonholes that were not well finished and had numerous loose uncut ends. Ocean pearl buttons, pearl buttons, and plastic buttons (the least desirable) were found on different shirts; buttons were well matched except on one shirt.

Four of the shirts tested had soft collars; 16 had fused collars. Twelve of the 16 retained their good appearance and withstood 20 machine launderings at 160°F without separation or blistering; three collars separated before completing the 20 launderings, indicating only fair performance; one collar separated and blistered after one laundering.

All of these factors and some others (12 major categories) were taken into consideration in rating the shirts. Because a shirt with a fused collar would not be satisfactory for dress wear when the collar had blistered, the shirt with the collar that failed with one laundering was rated *C. Not Recommended*. In determining the ratings, greatest weight was given to the quality of the fabric and the construction and workmanship of the shirts.

Most men want to be sure that a shirt collar is the right size. The collar size markings of all of the 20 shirts tested were found to be correct.

A. Recommended

Bond, Style Manor (Bond Clothes, Fifth Ave. and 35, New York 1) $2.95. Only shirt tested which met all the requirements of Commercial Standard CS 135-46. Fine material (high thread count). **AA2**

Brent (Montgomery Ward's Cat. No. 35—676) $3.15, plus postage. **2**

L. L. Bean (L. L. Bean, Inc., Freeport, Maine) $3.25. Fine material. Workmanship fair. **2**

Longwear (New Process Co., Warren, Pa.) $2.95. **2**

Pilgrim, DeLuxe (Sears-Roebuck's Cat. No. 33—393) $3.45, plus postage. Fine material. Buttonholes fair. Workmanship fair. **3**

Van Heusen (Phillips-Jones Corp., 1225 B'way, New York 1) $3.95. **3**

B. Intermediate

Pilgrim (Sears-Roebuck's Cat. No. 33—33) $2.19, plus postage. Fairly coarse fabric (low thread count); appearance of fabric fair. **1**

Fruit of the Loom (Abeles Shirt Co., 1150 B'way, New York 1) $2.98. Appearance of fabric, workmanship, buttonholes, fair; durability of fused collar fair. **2**

Mohawk (Mohawk Shirt Co., 1216 Arch St., Philadelphia 7) $2.98. Appearance of fabric fair. One pearl button not well matched. **2**

Wings (Piedmont Shirt Co., Greenville, S.C.) $2.95. Workmanship and buttonholes fair. **2**

Arrow, Dart (Cluett, Peabody & Co., Inc., Troy, N.Y.) $3.95. One sleeve too short (below marked size). **3**

Jayson, Whitehall (F. Jacobson & Sons, Inc., 1115 B'way, New York 10) $3.95. Appearance of fabric fair; durability of fused collar fair. **3**

Lion of Troy (M. Nirenberg & Sons, Inc., 1140 B'way, New York 1) $3.50. Workmanship and buttonholes fair. **3**

Manhattan, Duke Turf (Manhattan Shirt Co., 444 Madison Ave., New York 22) $3.95. Both sleeves too short. Durability of fused collar fair. **3**

Yale (Yale Shirt Co., 1239 B'way, New York 1) $3.95. Appearance of fabric fair. **3**

C. Not Recommended

Brent, Tacoma (Montgomery Ward's Cat. No. 35—669) $2.19, plus postage. One sleeve too short. Separation of layers of fused collar with "blistering" after one laundering. **1**

New Yorker (Le Roy Shirt Co., 358 Fifth Ave., New York 1) $2.95. Fairly coarse fabric (low thread count), with fair appearance. Workmanship fair. **2**

Pelham (Made for G. C. Murphy Co. variety chain store) $2.89. Oxford cloth. Both sleeves too short; shirt fell below minimum requirements in all five measurements. **2**

Shirtcraft, Hunt Club (Shirtcraft Co., 350 Fifth Ave., New York 1) $2.95. One sleeve too short. Workmanship and appearance of fabric fair. **2**

Tru Val (Tru Val Mfrs. Inc., Publix Shirt Corp., 281 Fifth Ave., New York 16) $2.95. One sleeve too short. Buttonholes, workmanship, fair; appearance of fabric fair. **2**

Nylon and Dacron Shirts

The market for nylon shirts, once popular best sellers, is now so reduced that some manufacturers have discontinued making them, and others are offering them at sharp price reductions. Nylon shirts have a great appeal for travelers, for they are easy to wash, dry quickly, and can be worn without ironing. It should be pointed out, however, that many wearers will consider that ironing is necessary to smooth out some of the puckers of the collar and seams, which would be considerably worse on shirts of some brands than on others. (A "cool" iron must be used; too hot an iron will damage the fabric.)

Although some men prefer nylon shirts to cotton ones for everyday wear, nylon shirts have faults that make them unsatisfactory for a great many men. These faults are wrinkling at the seams, unsightly fuzziness of the fabric, and a tendency of some nylon fabrics to acquire a yellowish tinge after a time. In a 1949 test by CR of five different brands of nylon shirts, shirts of all but one brand were found unsatisfactory for one reason or another before completion of 16 wearings and washings.

The all-nylon and nylon-and-acetate shirts in CR's most recent test were bought in 1950 and worn by members of CR's staff until they were judged unsatisfactory in appearance or until the test was concluded. One shirt of each brand was bought and worn except as noted. The shirts were examined for details of construction, and measured. All of the dress shirts but one, the *Arrow*, were skimped in size and failed to meet measurements set forth in Commercial Standard 135-46 in at least two dimensions, the front and back length. Practically, this means that the shirttails were too short and would be likely to make the shirts unsatisfactory for tall men. The sport shirt of the *Outdoor Man* brand met size requirements for sport shirts.

The *Arrow* dress shirt had the best appearance of all the shirts, and when the test was concluded, the two shirts of this brand were still satisfactory in appearance, although they had had 50 and 90 wearings and washings, respectively. CR learns with regret that Cluett, Peabody & Co. no longer makes the nylon *Arrow* shirts.

Aside from the *Arrow*, none of the shirts kept their good appearance for more than a few washings. The chief defects were wrinkling at the seams, bad puckering of collars, stitching coming out, and some frayed seams.

CR's studies did, however, turn up some useful information for the man who wants a shirt that can be washed by hand and dried without ironing. Two *Ramey* shirts made of Du Pont *Fiber V*, now called *Dacron*, bought in the early spring of 1951 and given the same sort of test and examination as the nylon shirts, still retained a good appearance after being worn and washed 25 times. They look well without being ironed and were almost white (actually "cream colored" and sold as such). One of these shirts was washed in an automatic washing machine but not put through the spin-cycle; the other was washed by hand and rinsed, but not wrung out. The shirts were hung up while dripping wet on an unvarnished wooden hanger (this washing treatment is recommended by the Du Pont Company for *Dacron* garments that are not to be ironed).

Both *Dacron* shirts dried rapidly. About the only difficulty experienced with them was trouble with static electricity. On a dry winter day, particularly, the sleeves would wrap around the arm in a way to be uncomfortable. It was found that this difficulty could be corrected by adding a few drops of *Glim* (a liquid synthetic detergent) to the rinse water. This method for treating nylon, acetate rayon, and other fabrics which tend to accumulate small charges of static electricity, has been suggested by the Du Pont Company.

Watch the Label!

As the picture on the right shows, the size designation "M" on the Outdoor Man shirt covered an essential part of the fabric identification label beneath. The consumer who is unaware, or buying in a hurry, might easily make his purchase on the assumption that the material of the shirt was all nylon.

Nylon and Part Nylon Shirts

A. Recommended

Arrow (Cluett, Peabody & Co., Inc., 10 E. 40 St., New York City) $8.95, plus sales tax. Wearing of the two *Arrow* shirts was discontinued after 50 and 90 wearings and washings. The only shirt tested that had a good appearance without pressing. Manufacture has been discontinued.

B. Intermediate

Airman (Shirtcraft Co., Inc., 1220 Curtain Ave., Baltimore) $8.95, plus sales tax. Wearing discontinued after 23 wearings and washings.

Coast to Coast (Distributed by National Shirt Shops, 315 Fourth Ave., N.Y.C.) $7.95, plus sales tax. Wearing discontinued after 36 wearings and washings.

Goodco (Distributed by Knickerbocker Men's Shops, 436 Seventh Ave., N.Y.C.) $7.94, plus sales tax. Wearing discontinued after 27 wearings and washings; this shirt had a better appearance unironed than the other *B*-rated shirts.

Marlboro (Marlboro Shirt Co., Inc., Paca and Lombard Sts., Baltimore 1) $8.95. Wearing discontinued after 29 wearings and washings.

Montgomery Ward (Montgomery Ward's Cat. No. 35—844) $7.75, plus postage. Wearing discontinued after 45 wearings and washings. See also *Yorke* below. Not listed in current catalog.

Nelson Paige (Mylish, Mann & Drucher, 22 and Arch, Philadelphia; Sears-Roebuck's Cat. No. 33—399) $7.95, plus postage. Wearing of three shirts of this brand was discontinued after 41, 58, and 104 wearings and washings, respectively. (One shirt had an unsatisfactory yellowish appearance after 15 wearings and washings.)

Outdoor Man (Crawford Clothes, Inc., 34-02 Queen's Blvd., Long Island City, N.Y.) $3.95, including sales tax. A green nylon and acetate sports shirt. Wearing discontinued after 21 wearings and washings.

Unbranded (Distributed by Farragut Shirt Co., 609 Eighth St., N.Y.C.) $3.88, plus sales tax. Nylon and acetate. Wearing discontinued after 16 wearings and washings.

C. Not Recommended

Yorke (Montgomery Ward's Cat. No. 35—844) $7.75, plus postage. This shirt sold under same catalog number as *Montgomery Ward* above. Wearing discontinued after 11 washings and wearings because of fraying of seams.

Dacron Shirt

A. Recommended

Ramey (M. H. Raab-Meyerhoff Co., Inc., 350 Fifth Ave., New York 1) $10.95. A well-made shirt of good appearance, but too short to meet suggested measurements in Commercial Standard for Men's Shirts. Gave trouble, as described in the text, with static electricity until rinsed with water containing a little *Glim*, a popular synthetic detergent used for dishwashing.

Painting in Cold Weather

ONE of the things the householder must consider is the maximum and minimum temperatures within which he may safely paint his house or other buildings. Many authorities say that painting should not be done when the temperature is below 40°F. Some are even more conservative and say that the temperature should not be below 50°. For the convenience and comfort of the painter, it is well to follow the rule when feasible. The rule, however, cannot always be followed, especially in the northerly parts of the country, for much painting has to be done when it is practicable and when the painter's services are available. Aside from the problem of the time for repainting, there is also need to paint new houses which reach the point of putting on the siding in December or January.

If a good house paint, free from water, is being used (water is sometimes found in paint in small amounts), outside painting can be done in the coldest weather the painter can stand and yet do his work properly. Oil paint does not freeze at 32°. Painting in cold weather, however, does present a number of problems. First of all the paint itself becomes stiffer in consistency when cold. This should be corrected by adding a little extra turpentine or other paint thinner. Add just enough to restore the proper consistency for application at the normal spreading rate. Don't add any more than is necessary and positively do not add any linseed or other drying oil. (It is assumed, of course, that we are starting with a prepared paint ready for application at normal temperature or with a paste paint that has already been correctly thinned for use at normal temperature.)

The next thing to worry about is dew or frost on the surface in the morning when work is to be begun. Even though the sun is late in coming up, it is necessary to wait until the frost melts and there is no free water on the surface. Just a little dampness on the surface of bare wood will not matter, but a previous coat of paint should be dry, that is, it should have no dew or moisture on it. Painting for the day must be discontinued soon enough to permit the paint to get fairly well set before dew or frost collects on it when night comes on, for dew or frost will make pockmarks on paint that will remain after it has dried. Fortunately the coating usually need be only barely set to resist such damage reasonably well.

In this connection it is wise to see that the paint is of a kind that will dry promptly before starting to use it on a house. Many painters using paste white lead, for example, in summer thin it with boiled oil and no extra drier. This is all right in warm weather, but in cold weather some drier must be added to take care of the raw oil with which the paste was ground by the manufacturer. Some prepared paints after

storage on the shelf may be a little slow in drying and need addition of a little drier for winter painting.

The worst hazard of winter painting is wrinkling of the freshly applied paint. This may be the result of the paint drying too slowly or too much oil may have been added, or the coats may have been applied too thickly; usually, however, the cause is a severe drop in temperature during the six or eight hours following application. If there is reason to believe that the temperature is going to drop more than 20° during the night after the last paint has been brushed on, it would be wise not to paint that day, or at least to quit painting by one o'clock.

Since thick coats of paint involve a hazard of wrinkling in cold weather, it is unwise to attempt two-coat painting of new woodwork at such times. Spread the paint more thinly and apply three coats. It is not a good idea, however, to apply one or two coats in the winter, with the idea of following with another coat or two the following spring, for long intervals between the coats of a single paint job are bad.

Finally, in winter painting we should consider the moisture content of the wood. In summer weather we can safely paint wood at rather high moisture content, say as much as 20 percent. It would be extremely unusual to find siding lumber of good quality with a moisture content as high as this, but it might well happen with barn boards or fencing. In winter, however, wood should be drier than in the summer (not over 14 percent to 15 percent of moisture) because the temperature dropping from the inside of the house through the walls will be moving the moisture outside into and through the siding, and on this account the moisture content may go high enough to produce conditions under which the paint may blister.

Small "Personal" Washing Machine

IN CONSUMERS' RESEARCH BULLETIN of October 1950, the results of tests on a *Monitor Model 6-P* washing machine were reported. This machine was found to be unsatisfactory in that its washing ability was much inferior to that of an earlier *Model 4*, previously tested by CR. The only major difference between the two machines was found to be in the design of the impeller. In 1951, another *Model 6-P* was obtained and this had a different impeller from that on the first *Model 6-P* tested (which gave the unsatisfactory results).

Those interested in this small washing machine will be well advised to check carefully and purchase only the *Model 6-P* that has an impeller similar to that shown in Figure 1.

Note: Other small washers on which CR has conducted tests are the *Whirlpool Whirlette* (rated *B. Intermediate* in the December 1948 CONSUMERS' RESEARCH BULLETIN), *Cinderella Model D*, and *Easy Whirldry Model H-47* (each rated *C. Not Recommended*, in the November 1947 and December 1948 CONSUMERS' RESEARCH BULLETINS, respectively). The *Whirlpool Whirlette* and the *Monitor Aerator Model 6-P* are considered to be about on a parity.

B. Intermediate

Monitor Aerator, Model 6-P (Monitor Equipment Corp., New York 63) $75 (*Model 6* without pump, $60). At present the rated capacity not given in pounds as is desirable, but in terms of sheets, pillowcases, dresses, etc., but equivalent to about 3 to 4 lb. of dry clothes. Power input: washer, 350 watts; pump (separate motor), 75 watts. Time for pump to empty 9 gal. of water, 2 minutes, 10 seconds. Washing ability, good, but not uniform. Water-removing ability of wringer, good. To avoid splashing, machine must not be operated with more than the recommended amount of water. Note: The rating refers only to washers which have an impeller of the better design, as shown in Figure 1.

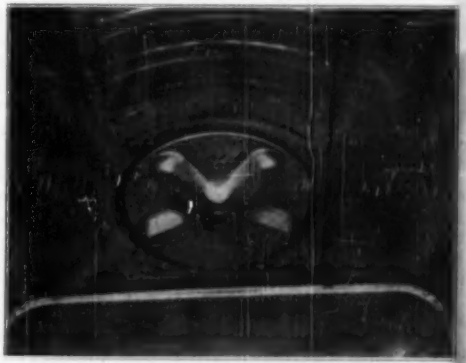


Figure 1 — Monitor impeller of the satisfactory type.

Figure 2 — Monitor impeller of the unsatisfactory type.

Methylcellulose Laxatives

By Erwin Di Cyan, Ph. D.

MANY in the past have used laxatives when no laxation was required, as, for instance, upon visiting distant places and different climates, after eating new foods, or most frequently when no evacuation had taken place for a day. Fortunately, the laxative habit is not as common today, particularly when pain in the abdomen is present, for which symptom a laxative was once the first thought — and sometimes a last act. Abdominal pain may be the sign of a condition in which laxatives are specifically harmful or dangerous, such as appendicitis or strangulation of the bowel.

Laxatives may be divided into four classes: (1) gastrointestinal *irritants*, such as castor oil, phenolphthalein, and cascara, (2) *dehydrators*, such as epsom salt or citrate of magnesia, which draw water through the intestinal wall into the large bowel, (3) *lubricants* such as mineral oil or mineral oil and agar mixtures, or mineral oil and chondrus mixtures, and (4) *bulk producers*, such as agar, psyllium, and most recently, cellulose derivatives such as methylcellulose or sodium carboxymethylcellulose. (Mineral oil and agar mixtures such as *Petrogalar* and *Agoral* owe their laxative effect to the lubricating action of mineral oil and only slightly to the bulk-producing action of agar, since the quantities of agar in these preparations are too small to have an appreciable bulk-producing effect. *Kondremul* contains mineral oil and chondrus, both lubricating agents, and is not a bulk-producing laxative.)

There is no "best laxative" or best class of laxatives, since different laxatives may be indicated when required for specific and various reasons. The laxatives which are probably least harmful are those of the class of bulk-producing agents. Nevertheless, it has been reported that bulk-producing laxatives such as sterculia gums have produced impaction of the laxative in the bowel, forming a hard obstructing core of the gum, high up in the intestinal tract. This may occur when taking certain bulk-producing laxatives with insufficient water. The gum particles swell up, increasing their volume many times by contact with food or moisture in the intestinal tract. They coalesce because there is present sufficient water to make them stick to each other, but insufficient water to soften them and cause them to mix with the bowel contents. Sterculia gum granules are most likely and psyllium concentrates or methylcellulose are less likely to cause such an impaction when taken with insufficient water.

Methylcellulose is a chemical derivative of cellulose and somewhat resembles a mass of absorbent cotton, and is also made in the form of a white powder. Paradoxically, methylcellulose is soluble in cold water but not in hot water, though hot water is used to disperse it in the form of a slurry, preparatory to the addition of cold water or ice, to make a solution. Methylcellulose is also used in certain food products, i.e., principally in those prepared foods (such as salad dressings) which require an emulsifier; in these it replaces natural gums.

The use of methylcellulose as a laxative is due to its quality of producing bulk as well as to its propensity of forming a jellylike fluid, which, mixed with intestinal contents, is somewhat lubricating and aids in the expulsion of the fecal mass. In these qualities it is similar to the natural gums such as psyllium, agar, or algin. Methylcellulose differs from them and from other natural gums and has certain advantages over them, in that it does not ferment, is not antigenic (i.e., does not cause the formation of an antibody), is not affected by digestive enzymes and therefore not changed by them. (Sodium carboxymethylcellulose, however, which is used for the same purpose as methylcellulose, and in addition as an antacid in the stomach, is not so inert to digestive enzymes.)

Unlike natural gums, methylcellulose does not swell in the stomach, but in the intestines. That is advantageous, in that a feeling of "fullness" does not result upon ingestion, but on the other hand, since it does not give a feeling of fullness in the stomach, its use in reducing regimens is not rational, since it does not still the "empty feeling" or hunger pangs.

Since methylcellulose is used for much the same purposes as the purified psyllium concentrates (not psyllium seeds), a comparison between them is of interest. Though the same effects are claimed for both, the data available for methylcellulose are much fewer than those for purified psyllium concentrate, and purified psyllium concentrate has a longer history of effectiveness than methylcellulose. The former, creating a gel, *probably* mixes more intimately with intestinal contents than the latter. On the other hand, purified psyllium concentrate is more lubricating. No scientifically controlled, comprehensively designed, impartial clinical comparison study between methylcellulose and purified psyllium concentrate has been published, but such a study is very much needed.

Methylcellulose is available in the form of 0.5

gram tablets, and 2 to 4 tablets constitute a dose. Yet there is serious doubt if methylcellulose tablets do actually disintegrate at the sites of the bowel where they may be most useful. There are no data available indicating if and where methylcellulose tablets disintegrate in their trek through the alimentary tract. There is doubt regarding that fact as methylcellulose, not too easily dissolved in cold water in which it is soluble (requiring stirring or mixing), does not meet hot water in the intestinal tract, with which a slurry could be made, nor cold water, which would enhance solution.

By lending a sense of fullness in the intestines, bulk-producing agents stimulate the peristaltic reflex, hence the urge to dispose of the bulk. In that fashion, bulk-producing laxatives as mechanical aids trigger the mechanism of elimination. The taking of bulk-producing agents or lubricants containing an irritant laxative (such as methylcellulose with senna or phenolphthalein or mineral oil emulsions with phenolphthalein) defeats the intended purposes by creating irritation of the bowel, which is not nullified by the mere fact that a bland substance such as methylcellulose, or a mineral oil emulsion is taken at the same time; whereas bulk-producing laxatives stimulate the peristaltic reflex, continuous or regular taking of these agents frequently conditions the system to the increased bulk. When so conditioned, the peristaltic reflex does not respond as readily as in an unconditioned bowel, and the effectiveness of even these bulk-producing agents is lessened or almost nullified when they are taken continually. It is now well known that *no* laxative should be taken when there is a pain in the abdomen.

All of the bulk-producing laxatives must be taken with *plenty of water* — two or three glasses — to assure their effectiveness and to prevent their swelling and obstructing the intestinal tract. In view of the fact, that unlike mineral oil, they do not inhibit absorption of fat-soluble vitamins, they may be taken near mealtimes if their use is indicated by a competent physician.

Certainly, laxatives *do not* flush poisons from the system, neither do they confer the glow of health, nor is daily elimination the sine qua non of a healthy constitution, as some advertising claims imply.

The following alphabetical listing of several bulk-producing laxatives, principally methylcellulose products, is given for informative purposes. The listing of the products is not to be taken as recommendations or ratings, for laxatives should not be taken habitually nor regularly, and if their use is required, the choice of a laxative should be made by a competent physician.

Bulk-Producing Laxatives

Cellothyl (Chilcott) Methylcellulose, 0.5 gram per tablet.
Cellusenna (Bobst Pharmaceuticals) Methylcellulose, 0.5 gram per tablet, with cascara and senna (irritant laxatives).
Choducell (Maltbie) Methylcellulose, 0.5 gram, and cholic acid, 40 mg. (a bile acid) per tablet.
Cologell (Lilly) Methylcellulose in suspension.
Hydrolose (Upjohn) Methylcellulose in suspension.
Konsyl (Burton, Parsons) A purified psyllium concentrate.
L. A. Formula (Burton, Parsons) A purified psyllium concentrate with dextrose and lactose.
Metamucil (Searle) A purified psyllium concentrate with dextrose.
Methocara (Warner) Methylcellulose granules with cascara and senna (irritant laxatives).
Mucilose (Winthrop-Stearns) A purified psyllium concentrate; also in combination with cascara, an irritant laxative.
Plancello (American Ferment) Tablets of methylcellulose, psyllium concentrate, and vitamin B_1 (the usefulness of which in a laxative is disputable).
Prulose Compound (Harrower) Methylcellulose, 0.5 gram per tablet, prune concentrate and diacetylhydroxyphenylisatin, a strongly irritant cathartic.

Repair of Appliance Heating Elements

AN OPEN-WIRE COIL heating element such as is used in electric range ovens, portable radiant heaters, toasters, etc., that has failed and broken and so no longer heats up can often be repaired satisfactorily by the use of a *Mend-It Sleeve* (Mend-It Sleeve Mfg. Co., 136 Bonita Ave., Piedmont 11, Calif.). The small size sells at 25 for $1.50, plus postage. The device consists of a small metal tube into which the two ends of the broken wire are inserted. The tube is then flattened upon the wire by firm pressure exerted by a pair of pliers or diagonal wire cutters. The walls of the tubing are so thick that a considerable force is required to flatten it sufficiently to make good contact with the wires, and this can be done perhaps only by a person who has strong muscles in his hands. When the sleeve was properly applied, it produced a satisfactory repair of the heating element.

Storage Batteries

ACCORDING to the American Automobile Association, battery failure was the major cause of automobile breakdowns during 1950. Battery failure, when it occurs before the normal expected life-span of a battery is completed, may be caused by one or more of the following conditions.

1. Overcharging, which causes loss of water and relatively high internal heat. Both effects tend to hasten disintegration of the plates and separators; overcharging is indicated by the battery's requiring replenishment of the water more frequently than should normally be needed.

2. Undercharging, or the maintenance of a battery in a poor state of charge. This causes deposition on the plates of a hard sulfate that cannot be reconverted to active material. The deposition of the sulfate causes buckling or distortion of the positive plates and reduces the capacity of the battery to deliver its output when needed — for example, under winter starting conditions. Generally, undercharging is the result of not driving sufficiently in the daytime, or of excessive use of accessory equipment such as radio, heater, direction signals, horn, etc.

3. Mechanical failures are often the result of having the hold-down fastenings too tight, with consequent warping or cracking of the battery case. If the fastenings are too loose, excessive vibration may abrade the casing and also do damage to the internal structure. The bracket and hold-down fasteners should be checked at regular intervals to insure that they are supporting the battery properly and have not become corroded or loose.

4. Low water level, which in turn may mean higher concentration of the battery acid, with consequent deterioration of the separators between the positive and negative plates, and sulfation of the plates, both of which impair battery performance.

The original state of charge of the batteries purchased for this test clearly indicates what the unsuspecting and poorly informed consumer may expect from a new battery. More than 30 percent of the cells had an indicated specific gravity when purchased of 1.220 or less (see Table I), indicating that as sold their capacity was only one-half that which it would have been if they had been fully charged. In addition, a battery maintained in a fully charged condition deteriorates at a much slower rate than one which is partly or wholly discharged. It would seem imperative, therefore, that, when about to make a purchase, the consumer should attempt to find a dealer who is known to have fast turnover of his stock and *who maintains his current stock of batteries at full charge* at all times. In addition, the consumer buying a new battery has a right to require that the specific gravity reading of each cell be taken and recorded for him, and he should accept only a battery that shows a reading of 1.250 or higher on each cell. It is desirable, too, that the cells should give about the *same* specific gravity readings, and the voltage readings for the cells should be closely alike. In this connection it should be remembered that hydrometer floats are calibrated to read correctly at one temperature of the electrolyte only, usually 80°F. At lower and higher temperatures, the electrolyte shrinks and expands, respectively. When the liquid is warm, the specific gravity reading will be lowered. The correction for the temperature at which the reading is actually taken can easily be made. It amounts to about 0.004 or 4 "points" for each 10°F change in temperature. If the temperature of the electrolyte is less than 80°F, the correction is subtracted from the reading obtained on the hydrometer; if higher, it is added to the reading obtained.

From time to time notices appear in the press regarding new types of batteries which are said to offer exceptionally long life, and there are other claims which make a particular battery appear very desirable for the consumer. An example is the nickel-cadmium battery which was highly touted a few years ago as the answer to the automobile owner's prayers, but which still has to prove itself in service with regard to size, weight, cost, and starting capacity. Another example was the new battery developed by the Bell Telephone Laboratories for low-drain use in the Bell System exchanges. Although the many trade and press notices led one to believe that it would revolutionize the battery in-

Table I

Specific Gravity[1] of Cells as Purchased

Specific Gravity Reading	No. of Cells
1.175 and below	4
1.175 to 1.190	7
1.190 to 1.220	5
1.220 to 1.250	27
1.250 to 1.280	8

[1]The acceptable specific gravity reading for automobile batteries in use, except the low specific gravity batteries as used in *Pontiac*, is in the range 1.220 to 1.280. Hydrometers as used in service stations usually omit the decimal point in their graduations; thus a hydrometer reading of 1250 corresponds to a specific gravity reading of 1.250.

dustry, this has not happened at all and is not likely to, for the service requirements of the newly developed Bell System battery are not at all like those which apply to automobile batteries. Unfortunately, the new *Exide Ultra-Start* battery was announced after CR's tests were well under way and could not therefore be included in the present series. While CR has not tested one of these batteries, it advises caution on the part of consumers in judging their characteristics until the claims of "amazingly longer life" can be tested and judged by disinterested sources.

CR's Tests

Each battery included in this test was put on trickle charge immediately after purchase and was not considered ready for the discharge tests until all cells gave three consecutive readings of 1270 or higher. In order to obtain an indication of the normal life expectancy of the batteries, each battery was discharged until its voltage had dropped to 5.25 volts, the figure set by the Society of Automotive Engineers, while supplying 5 amperes of current. If two batteries are compared, one of which supplied 107.2 ampere-hours before falling to 5.25 volts and another 98.2 ampere-hours, the expectation is that the first battery will have the greater amount of active material, and probably a longer life in normal use.

Following the 20-hour discharge test, each battery was discharged to a terminal voltage of 5.1 volts while supplying 12.5 amperes of current. This test was made since, in CR's opinion, that discharge rate more nearly represents the load carried by the battery in a modern automobile with its many electrically-operated accessories than does the 5-ampere rate used in the conventional test. This is shown in Table II which gives an approximate indication of the current required by several of the electrically-operated parts or accessories of a car.

Table II

Typical Current Load of Modern Car

Head Lamps	14	Amperes
Radio	7.5	"
Heater and Defroster	7.0	"
Ignition	1.7	"
Tail Lights	1.2	"
Instrument Lights	0.8	"
License Light	0.6	"

In order to obtain an indication of the ability of the battery to start a car on a cold winter day, a third test, and likely the most important over all, is made wherein the time is measured during which the battery delivers 300 amperes of current while cooled to 0°F.

The heavy draw (125-700 amperes) on a storage battery when starting a car is not generally appreciated by the average motorist. Not only is the engine very difficult to turn over in cold weather because of the stiffness or high viscosity of the oil, but the power available from the battery, even though it be fully charged, is greatly reduced. (A fully charged battery at 0°F has only about 40 percent of the capacity it has at 80°F. There is also a possibility that the battery electrolyte may freeze in very cold weather if the condition of charge is low.)

Storage battery guarantees are usually based on a prorata basis. Thus, the consumer does not receive a full refund or allowance on a battery which fails after 16 months of service although it carried an 18 months' guarantee. Rather, only 2/18 of the purchase price are allowed toward the purchase of a new battery, and the new battery usually has to be of the same make if the allowance is to be granted.

All the batteries in the test were of 100 ampere-hour rating (the rating of the *Prest-o-lite* was assumed 100 ampere-hours on the basis of literature available). In the listings, the actual ampere-hour capacity of each battery at a 5 ampere discharge rate is followed by the ampere-hour capacity at a 12.5 ampere discharge rate, and the third figure gives the number of minutes during which the battery, when cooled to 0°F, was able to deliver 300 amperes of current before its terminal voltage dropped to 3 volts. Ratings are cr51.

A. Recommended

Wards Winter King, Type S1F (Montgomery Ward's Cat. No. 61—6311F) $14.45, at a retail store. 51 plates. 24 months' guarantee. *106.5 ampere-hours, 96.5 ampere-hours (at 12.5 amperes); 4.7 minutes, battery at 0°, 300 amperes discharge rate.* One of two best for cold-weather starting. **1**

Delco 15AA (Delco-Remy Div., General Motors Corp., Anderson, Ind.) $19.30. 45 plates. 18 months' guarantee. *113.5, 104.0, 4.0.* **3**

Gould 1-DR-100 (Gould National Batteries Inc., Stone and Calhoun Sts., Trenton 7, N. J.) $19.60. 45 plates. 18 months' guarantee. *106.0, 95.5, 4.6.* One of two best for cold-weather starting. **3**

Prest-o-lite M1-15 (Prest-O-Lite Battery Co., Inc., Toledo 1, Ohio) $19.90. 45 plates. 18 months' guarantee. *113.0, 101.5, 3.9.* **3**

B. Intermediate

Allstate Cross Country (Sears-Roebuck's Cat. No. 28—46F) $13.45, at a retail store. 45 plates. 24 months' guarantee. *104.0, 89.5, 4.1.* Note that, contrary to ex-

pected results, this battery with 45 plates had greater starting capacity than the *Allstate Cross Country* with 51 plates listed under *C. Not Recommended.* 1

Wards Winter King, Type S1 (Montgomery Ward's Cat. No. 61—6310F) $14.45. 45 plates. 24 months' guarantee. *102.0, 91.5, 4.4.* 1

Atlas A—1 (Esso Standard Oil Co.) $19.95. 45 plates. 21 months' guarantee. *103.5, 90.5, 4.0.* 3

Auto-lite PN-15 (Electric Auto-lite Co., Toledo 1, Ohio) $21.50. 45 plates. 18 months' guarantee. *109.0, 98.0, 3.8.* 3

Exide Sure-Start 1 (Electric Storage Battery Co., 1950 Allegheny Ave., Philadelphia 32) $21.45. 45 plates. 18 months' guarantee. *117.0, 106.0, 3.6.* Results are averages for two batteries tested. Winter starting capacity, low. 3

Firestone L-151 (Firestone Tire & Rubber Co., 1200 Firestone Parkway, Akron 17, Ohio) $20.45. 45 plates. 18 months' guarantee. *99.0, 92.5, 4.1.* 3

Goodrich LC-2B45 (B. F. Goodrich & Co., 448 S. Main St., Akron, Ohio) $19.95. 45 plates. 18 months' guarantee. *104.5, 97.0, 3.6.* 3

Willard HW—1—100 (Willard Storage Battery Co., 246 E. 131 St., Cleveland) $21.45. 45 plates. 21 months' guarantee. *106.0, 98.0, 3.9.* Two batteries tested. 3

C. Not Recommended

Allstate Cross Country (Sears-Roebuck's Cat. No. 28—76F) $13.45, at a retail store. 51 plates. 24 months' guarantee. *106.0, 90.5, 3.0.* Winter starting capacity, one of two lowest in group tested. 1

Goodyear A-115 (Goodyear Tire & Rubber Co., Inc., 1144 E. Market St., Akron 16, Ohio) $21.45. 45 plates. 18 months' guarantee. *111.0, 98.5, 3.0.* Winter starting capacity, one of two lowest in group tested. 3

Mobil W 451 (Socony-Vacuum Oil Co., 26 Broadway, New York City) $19.95. 45 plates. 18 months' guarantee. *97.5, 85.5, 3.4.* 3

Two Home Fire-Alarm Devices

THE *Fyr-Larm* (Syracuse Fyr-Larm Co., Inc., Syracuse) is a fire-detecting device now much advertised for use in the home, and selling at $6.95; refills at 75c postpaid. (Special units, at a higher price, are also offered, which are intended for farm, rural, and factory uses.) According to the manufacturer's advertising literature, these units are completely automatic, and when temperature reaches 130°F, "harmless compressed gases within the tube builds up approximately 1800 pounds P.S.I. pressure, thus releasing the warning whistle."

Other advertising material furnished by the manufacturer indicated that the *Fyr-Larm* had been tested and approved by the safety department of a well-known public institution. Upon checking, however, it was discovered that use of this testimonial by the manufacturer had not been authorized. Moreover, the institution had not found the devices satisfactory in use.

A technical test of the *Fyr-Larm* conducted for CR confirmed the foregoing observation. For example, in one instance the device was exposed to a temperature of 300°F for three minutes, and it failed to sound the warning whistle, although when the device was taken down from the ceiling, it was so hot it was difficult to handle without gloves.

CONSUMERS' RESEARCH BULLETIN of August 1948 at page 30 reported briefly on a *Scots Guard* fire alarm which was found to be unsuitable, in that the bell could be heard only by persons fairly close to it. The sound lasted only a brief time — about one minute — and was not sufficiently loud to be heard under various conflicting noise conditions in the home. (The bell made a noise that would not be heard under noisy conditions [or in sleep] much further than a telephone bell or a loud-ringing alarm clock.) In a further test, one of the *Scots Guard* devices failed to operate at temperatures as high as 175°. On another trial, it did not work at all, because of a mechanical failure. (The temperature-sensitive capsule expanded sufficiently to bend the actuating lever, which failed to release the alarm movement.) During the tests, the bell, which is rotated by hand to wind the spring, became loose on its shaft, so that the device could no longer be wound up by the user.

The consumer's best protection against fire will be his own senses of sight, hearing, and touch, and members of the family should be instructed that any unusual odor, or the presence of any slight amount of haze in the house, or any unusual occurrence suggestive of overheating connected with the electrical wiring, either visible or concealed in the walls, should be reason for immediate investigation to see whether a fire is starting at some point. Children particularly should be warned to bring any such occurrence immediately to the attention of an older person in the house; if the family is away, to the notice of a neighbor, or of a policeman, or to report the situation to the fire department by telephone.

Fire alarm devices of the kind being sold to householders have not in general proved satisfactory, and CR advises against the purchase of any alarm or extinguisher unless it bears a mark indicating approval by the Underwriters' Laboratories of Chicago or the Engineering Division of the Associated Factory Mutual Fire Insurance Companies, Boston.

Preventing the Freezing of Gasoline Lines in Automobiles

Editor's Note: *In* CONSUMERS' RESEARCH BULLETINS *of February 1946 and November 1948, CR discussed substances intended to be added to the gasoline tank to deal with the problem of small amounts of water accumulating in the bottom of the tank; this water, which may have been delivered with the gasoline, but which some hold is more likely to be present because of condensation of moist air on the inner walls of the tank, sometimes gives very serious trouble in cold weather by freezing at some part of the fuel lines, and so preventing delivery of gasoline to the carburetor. A number of qualified chemists do not consider the problem to be a serious one, or consider that the difficulty does not occur often enough to require preventive action by most motorists. It should perhaps be added that chemists are not in agreement on some of the questions involved in the use of chemicals to deal with the problem of water accumulations in gasoline, and there may, therefore, be some who will disagree with some of the statements in this article. We shall be glad to receive comments from any persons in the fields of alcohol or gasoline chemistry who may care to offer suggestions or new information on the problems discussed.*

YEAR-ROUND DRIVING has become increasingly practicable each year, and it is now the exception rather than the rule that motorists put their cars away for the winter in dead storage. All winter driving gives rise to problems due to the presence of small amounts of water in the gasoline, and this applies whether an automobile is in live storage in a garage, and whether the garage is heated or not. Of course, a large part of the time, a gasoline tank is only partly filled, and since it is not hermetically sealed, air that contains moisture enters and leaves it with the rise and fall of temperature in the surrounding atmosphere. Water, too, may enter the fuel tank by seepage when the car is exposed to rain, sleet, and snow in outdoor storage. Operators of commercial vehicles have trouble with water in gasoline, but it comes rather from the very large quantity of fuel which they use (since all liquid fuels contain a certain amount of moisture in solution which may be precipitated out at low temperatures) rather than by introduction of moisture in other ways.

Very small traces of water in solution in gasoline of the order of 1/100 of 1 percent or less, have no damaging effect. However, once this moisture has been precipitated from the gasoline through lowering of the temperature, it is reabsorbed only very slowly.

A critical point in the delivery of the moisture-laden gasoline to the carburetor is in the screens intended to take out particles of dirt. Sudden cooling of gasoline at the screen, which is a good conductor of heat, and at the carburetor throttle plate may cause the moisture to separate from the fuel in the form of ice crystals which will cause a failure of the gasoline supply to the carburetor.

The technical requirements for the various chemicals sold to consumers to be added in very small amounts to the gasoline, to help prevent the difficulties described, are rather stringent. They must be liquids. Their boiling range must be within that of the motor fuel to which they are added. They must not form gums under any conditions. They must burn as cleanly as the fuel itself. They must not be corrosive. They must be soluble (but only to a limited extent) in gasoline, so as to help keep the moisture dispersed throughout the fuel supply and carry it through the dirt screens to a point where the fuel is mixed with air and ready to enter the combustion chamber. They must be soluble in water, and when mixed with water must have a very low freezing point.

Thus the added substances should function both as a *mutual solvent for water and gasoline*, and as a *depressant for the freezing point* of the water with which it mixes. One qualified chemist thinks that the experts are not in agreement on whether it is necessary actually to remove the water which may separate in the gasoline tank or in the lines. It is his view that the principal function of the added chemical (which he believes cannot function to keep water in solution unless the water present is in very small amounts) is to dissolve in the separated water in sufficient amounts to prevent its freezing in the fuel feed system (that is to act as an anti-freeze for the small amount of water in the gasoline tank and tubing). Of commercially available products, methyl, ethyl, and isopropyl alcohols come nearest to meeting these requirements. Experiments seem to indicate that it is

practically impossible to add enough of a mutual solvent to keep water in solution in the gasoline; hence, the best approach to the problem seems to be by the method of adding one or more alcohols and other substances as an anti-freeze to be dissolved in the free water.

Methanol (methyl alcohol, wood alcohol), ethyl alcohol, and isopropyl alcohol are in common use at the present time to be added to the fuel in the tank for the purpose of "winterizing" gasoline. A substance having a lesser solubility in water than any of the above would be even more effective, because it would be less likely to be stripped from the gasoline by water. (If all the additive lies in the water at the bottom of the tank, it cannot fulfill its function of preventing ice formation on the screens through which the gasoline passes at a low temperature.) The use of the denatured alcohol, sold under various trade names (*Ponsolve, Synasol, Paco, Solox, Shellacol*, etc.) in paint and hardware stores for cutting shellac, has been suggested. This is officially known as Proprietary Solvent No. 1, and is prepared from specially denatured alcohol No. 1 by the addition of further denaturants such as wood alcohol, gasoline, ethyl acetate, tertiary butanol, methyl isobutyl ketone, etc. Some of these products can be obtained, when desired, in a form in which the alcohol base is water-free (anhydrous).

Since the motorist may find some difficulty in purchasing methyl alcohol or isopropyl alcohol of a high degree of purity for the purpose of winterizing gasoline, he may prefer to buy commercial preparations offered for this purpose. Several products now being sold under trademarked names in containers of convenient size are: *Dry-Ex* (manufactured by Commercial Solvents Corp.), *Heet* (marketed by Demert & Dougherty of Chicago), *drout* (manufactured by the Casite Corp.), *Cristy-Dry Gas* (manufactured by the Cristy Chemical Corp.), *Gas Guard* (manufactured by E. I. du Pont de Nemours & Co.), and *Allstate Gas Line Anti-Freeze* (sold by Sears, Roebuck & Co.). The general recommendation is to use 1 pint of the proprietary material for 10 to 12 gallons of gasoline, but where the manufacturer provides adequate directions, it is best to follow those rather than any general recommendation. As a rule, only small quantities are required, and harm can be done if too much is used, but the products should be used consistently during severe winter weather. Never use more than 1 pint for 10 gallons of gasoline.

One of the well-known products, *Gas Guard* (manufactured by E. I. du Pont de Nemours & Co.), has been analyzed and found to consist of 38% methanol and 62% isopropanol (isopropyl alcohol). The maker recommends use of a pint of *Gas Guard* per thousand miles of travel, after the first use of the product at the rate of 1 pint per 15 gallons of gasoline.

Emergency needs may arise for the winterizing of gasoline when trade-name preparations are not easily available. Under these conditions ordinary alcohols as used for lowering the freezing point of water in radiators may be used. One should under no circumstances use anything but radiator alcohol, undiluted; anti-freezes of the permanent or glycol type are entirely unsuitable and may cause trouble. The quantity of ordinary "radiator alcohol" to be used must never be more than 6 ounces or 1/5 quart for 10 gallons of gasoline. Some proprietary anti-freeze alcohols contain corrosion inhibitors (which may consist of sulfonated oil with some free fatty oil as a foam inhibitor and anti-seepage agent) which may be thrown out of solution by gasoline; in the amount of alcohol which it is suggested here should be used, these inhibitors should cause no trouble.

Individuals desirous of preparing their own winterizing additive for gasoline can do so by purchasing isopropyl alcohol of a grade as nearly anhydrous as possible from a wholesale drug dealer, and using this material in concentration of 1 pint per 10 gallons of gasoline.

The compounding of solutions containing either methyl or ethyl alcohol is not recommended for individual consumers. The reason for this is that the consumer will not as a practical matter be able to work with the tax-free pure ethyl alcohol, which is the desirable kind, on account of government restrictions on its use and handling, and with methyl alcohol there is a definite hazard to health when the work is carried on inside of a building or when the material is spilled on the hands or perhaps a drop or two splashed into the eyes. High-proof methyl alcohol is not easy to buy, and its very poisonous character makes it undesirable material for handling by anyone not trained in work with poisonous chemical substances.

Corrections and Emendations to Consumers' Research Annual Cumulative Bulletin (ACB) and Monthly Bulletins

Sheet-Type Roofing
Col. 379
ACB '51-'52

Delete *Barber* (Barber Asphalt Co., Barber, N. J.) and substitute *Barber Genasco* (Bonafide Genasco Inc., 295 Fifth Ave., New York City).

Linoleum
Col. 392
ACB '51-'52

Delete listing of *Kolorflor* (Delaware Floor Products, Wilmington, Del.). Manufacture of this product has been discontinued.

Warfarin — A New Rodenticide

WARFARIN was introduced to the world with all the fanfare which has come to befit the debut of a present-day organic chemical. It has found a place for itself in rodent control, but not the place that early publicity may have led some to expect. Skillfully used, Warfarin can be an efficient rodenticide, but it has its limitations. As has been true in the case of other useful poisons, there has been a tendency to exaggerate in publicity and advertising what Warfarin will do. Some of the claims made for the chemical, both with respect to its effectiveness and its safety in use, have already been the subject of a National Better Business Bureau bulletin, and the Wisconsin Alumni Research Foundation, which holds the Warfarin patent, has expressed disapproval of some claims made to the effect that Warfarin is substantially "harmless."

Warfarin is an *anticoagulant*. When introduced into the body of a mammal, it acts on the liver to lower the prothrombin in the blood; this has the effect of producing hemorrhage within the body, which causes death. Single doses do not always kill, although single dosages have killed cats when administered at the level of 5 milligrams per kilogram of body weight; dogs have succumbed at a dose of 20-25 mg./kg., and hogs have been consistently killed at 25 mg./kg. The production of hemorrhage most often results from the administration of successive dosages, even when individual doses are small. Thus, to use Warfarin successfully to kill rodents, one must have the chemical in a bait acceptable to the animals, and the baits must be kept available for their feeding until they have received a lethal dosage. When evidences of feeding stop, it is assumed that a lethal dosage has been acquired.

Based on experience, this may take from 5 to 30 days, and in unusual cases longer, *from the time the rats or mice begin to feed*. So it can be seen that the use of Warfarin may require patience and continued work and attention over a period of time. Bait stations must be kept under inspection to insure that a constant supply of bait in an edible condition is available; moreover, in many cases the business of picking up dead carcasses and disposing of them is also spread out over a period of days.

The removal of rodent carcasses, from buildings in particular, is an important item in any control program and should not be delayed. Whether odors have developed or not, carcasses attract blowflies in the summer and in all seasons they attract clothes moths, carpet beetles, hide beetles, and other beetles which can often cause more economic loss than the rodent itself did while alive. Then, too, rodents are usually infested with lice, fleas, and mites. It is through some of these parasites that certain diseases are transmitted to man and animals. The parasites leave the rodents soon after they die. In many sections of the country, DDT dusting of the rodent-infested area or the runways over which they have been traveling to kill the insect parasites is to be highly recommended. The dusting with a 5 to 10 percent dust should be started as soon as the first death occurs, or if no dead rodents are observed, the burrows should be dusted as soon as feeding at bait stations ceases. It has been pointed out also that during the time the Warfarin killing process is going on the rodents are still in a position to spread their contaminants, and particularly in cases where food intended for human consumption is stored, this may pose a fairly serious problem.

Before rats or mice die from the administration of Warfarin they lose speed in movement, and while in this state they are easy prey for cats and dogs. If these animals catch and consume enough rats and mice or eat enough dead carcasses, they, too, will die. The dangers of secondary poisoning are particularly a problem with pigs and, in cases of heavy infestations of mice, with cats. Heavy feeding for pets that may be exposed during the period the rodents are being poisoned is to be recommended, for it may help to lessen this danger.

One may find that the baits have attracted ants. Some species of ants will attack and bite rodents about the mouth when they try to feed, with the result that the rats will not feed. Control of the ants may therefore in some cases be a necessary adjunct to the rodent poisoning program.

Despite the patience and extra work which may be involved in the use of Warfarin, there is much in its favor, for it does possess some of the attributes of the theoretically good rodenticide. The acid form of the chemical which is now being marketed is odorless and tasteless; rodents evidently do not taste it in food. Because its action is insidious, they evidently do not become aware of anything being wrong with them until it is too late. To date there are no records of Warfarin producing "bait shyness." Because of this, those who are skilled in rodent poisoning have produced some amazing results with Warfarin in control of the Norway rat. They have been able to clean up infestations where other poisons, even 1080, have,

probably through unskilled use or economic factors, failed to give satisfaction.

However, summaries of field studies show that there are few cases where complete extermination is claimed, and that satisfactory control is limited to from 80 to 90 percent at most. If "bait shyness" has already been established in a colony through the use of other chemicals, one cannot assume that Warfarin baits will be accepted; Warfarin, too, may be refused.

As with all chemicals to be used in poisoning, *the selection of the bait is of prime importance,* for rodents eat because of the bait and not because of the poison. When baits are readily acceptable, feeding is more avid and more frequent; this reduces the time required for the completion of the job.

Rats do have food preferences. The Norway rat requires water; on the other hand the roof rat and the black rat seldom drink it. The former prefers foods high in protein, while the latter two prefer fresh fruits, vegetables, and succulent seeds above cereals and meats. Mice are nibblers of food and generally a small quantity of sugar is included in the bait to increase its attractiveness for them. One important factor in the selection of a bait is knowing what foods the rodents in the infestation have been feeding upon. If, for instance, they are feeding on corn, they are not likely to be attracted to some platefuls of poisoned corn that may be put out. It is often necessary to provide a variety in the feeds offered.

Unfortunately the acid form of Warfarin is not readily soluble in water. Furthermore, many of the foods that rats prefer spoil readily. Using these foods with Warfarin very often necessitates replacement of bait daily and, of course, additional quantities of poison. Furthermore, it has been suggested that foods high in vitamin K, such as beef and hog livers, eggs, cheese, and tomatoes, may retard the action of the poison and might nullify it altogether. To date the most practical carrier suggested for Warfarin has been coarsely cracked yellow corn (not yellow or white cornmeal which is finely ground); the corn, too, may turn rancid in warm weather. Cracked corn is usually sold at feed stores. Cornmeal, rolled oats, flour, and other cereal products have, however, given results. The Warfarin concentrates readily mix with all of these foods provided one makes small batches (1 ounce concentrate with 19 ounces of the food).

Warfarin concentrates containing 0.5 percent Warfarin and Warfarin ready-mixed baits containing 0.025 percent Warfarin are marketed by several companies under various brand names. The labels of each show the active ingredient by its official name, Warfarin (3[α-acelonylbenzyl]-4-hydroxycoumarin), and the percentage contained. The directions for use which are on the label should be followed.

Costs will be higher if ready-mixed baits are used rather than the concentrate, and in either form the use of Warfarin will cost more than use of one of the many faster-acting rat poisons. Not all ready-mixed baits use cracked corn; some manufacturers use cornmeal; some use mixtures of cornmeal and pancake flour; and so on.

In placing baits, the same techniques are used as when baits are put out containing poisons other than Warfarin. When corn or other cereal is used, it is probably desirable to place the bait in fairly large quantity to reduce the necessity for frequent rebaiting.

Keep baits protected from animals and human beings.

In handling Warfarin keep in mind that it is a rodenticide, and deadly to all mammals. The chemical which will kill a rat holds hazard for you, your family, your pets, and your livestock. Warfarin involves special dangers because it is odorless and tasteless. Do not be lulled into false assumptions regarding Warfarin by phrases seen in advertising or publicity stories such as "relatively safe" or "safer." Nor should you relax your procedures because there are antidotes. Antidotes are often at best extreme measures, and quite often by the time symptoms of poisoning are recognized in a person or an animal, it is too late. As far as Warfarin is concerned, the administration of the antidote known at this time requires the services of a physician or veterinarian as the case may be; bear in mind, too, that not everyone can diagnose the cause of the poisoning and that precious time may be lost in trying to determine the cause; there may very likely be circumstances where Warfarin may not be suspected or known to have played a part.

While Warfarin promises to be a very useful chemical in poisoning to control rodents, permanent bait stations containing Warfarin will not prevent reinfestation; they will only serve to poison new invaders after they have found the bait and have received a lethal dosage from their feeding. The maintenance of permanent bait stations which may be set up with the aim of keeping rodents permanently under control is not as effective as it may sound, for the stations must be kept under continued inspection to insure freshness of bait. (In damp weather, for example, corn may turn rancid.) There is no easy solution to the maintenance of permanent bait stations, for they may create an insect problem by attracting large numbers of ants and some of the other numerous insects which attack stored foods.

Good rodent control starts with good construction and rodentproofing of the dwelling or other building, correlated with good housekeeping and sanitary procedures. The best method of control is prevention, and the best means for prevention are to *build them out* and *starve them out.*

A New "Motor Cleaner"

Consumers' Research has had an analysis made of a product called *Esso Motor Cleaner*; this represents a new development in additive oils, in that the consumer is being urged to make his own premium or additive oil, by pouring *Esso Motor Cleaner* into the crankcase along with the regular oil. The product is similar to the additives being marketed by Standard Oil Co. of New Jersey, and no doubt others, to manufacturers and compounders of lubricating oil. Standard Oil Co. issues a booklet on *Esso Motor Cleaner* recommending it as a "new and unique product designed to remove deposits (particularly cold engine sludge) from all parts of the engine that are directly contacted by the lubricating oil supply." The material is to be used by adding a quart of the motor cleaner to several quarts of the regular motor oil, running the engine for a 300 to 1000 mile period, then draining and refilling with new motor oil after that interval. It is advised that this process be carried out twice a year, normally at the time of the spring and fall oil changes. Standard Oil Co. claims that the product is safe for use in any engine, and that it is compatible with any type or brand of motor oil.

Oil experts express the opinion that the use of *Esso Motor Cleaner* would not be likely to do harm to the engine, but they consider its use should be limited to crankcase oils classified as either "regular" or "premium" grade. The product would not need to be added to heavy-duty oils because they contain a detergent at the time they are shipped by the manufacturer. An additional amount of detergent might be definitely disadvantageous. They believe that the claims for removal of "soft cold engine sludge" are justified, and that there will be some of the effect that is claimed in dissolving tar and gums.

There are some doubts about the wisdom of employing an additive in this way, since in the past it has been the practice of manufacturers of detergents to market them only to refiners and compounders; in those circumstances the additive could be properly adjusted to the base oil before the finished lubricant was released to the consumer.

One expert considers that the recommendation in the motor cleaner booklet that *Esso Motor Cleaner* and flushing oil may both be used, in helping to keep an engine clean, is not sound. It would appear that in bringing out the new product, the company does not wish to lose its sale of flushing oil. Unbiased opinion would favor the use of *Esso Motor Cleaner* rather than the flushing oil.

The composition of *Esso Motor Cleaner* has been estimated to be light lubricating oil, 59.3%; high flash naphtha, 39.2%; inhibitor (which appears to be an organic sulfide such as dibutyl phenol sulfide), 0.75%; detergent (which appears to be calcium petroleum sulfonate), 0.75%.

A detergent (heavy-duty) oil (or detergent additive) should not be used in a long-used or dirty engine; its strong action in dislodging deposits produced by a "regular" oil previously used may cause clogging of oil passages and possible serious damage to the engine.

Apparatus for determining distillation characteristics of an oil, including initial boiling point, the temperature at which each 10 milliliters comes over, and the volume distilled off for each 10°C increase in temperature.

Automobile Ventilating Systems Often Hazardous

ACCORDING to an item in the Automotive Industries News Letter of April 13, 1951, the wife of a *Buick* owner lost a suit for damages in which she charged that the death of her husband from carbon monoxide poisoning was due to the action of the ventilating system of his car. The owner of the car died while sitting in his 1947 *Buick* which was parked directly behind another car that had its engine running.

CR has mentioned the hazard involved in the type of ventilating system now popular in automobiles. It is suggested that anyone who owns a car of any one of the makes that has a low front-end air intake should avoid parking too closely behind a taxicab or truck or other motor car which has the motor running.

The plaintiff lost her case because the court ruled that the design of the ventilating system was not such as to evidence negligence on the part of the manufacturer. While the courts may hold that manufacturers are not legally to blame for mishaps that occur because of the design of the ventilating systems in automobiles, it is a fact that most of the arrangements for taking in fresh air on today's cars do involve a hazard that could be avoided to a considerable extent by better design. The danger of picking up large and potentially death-dealing amounts of carbon monoxide from the exhaust of a car ahead when a driver is following closely behind other cars in traffic, or when a car ahead happens to be parked with its engine running, is a very real one.

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†indicates that listings of names or brands are included.

Off the Editor's Chest

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to question, but in any event the House Committee has brought to public attention the *need* for careful investigation. New chemicals in food have made their appearance so fast in recent years that it is almost impossible to keep track of them, let alone pronounce their names. As Dr. James R. Wilson, Secretary of the A.M.A.'s Council on Foods and Nutrition, put it, "One good, hard-working chemist can create more problems than ten toxicologists can solve — and we don't have that many toxicologists." Just a few of the problems are residues of insecticides, such as DDT, that are sprayed on cattle and later find their way into the milk, chemical emulsifiers which are used to replace natural fats in baked goods, preservatives that enable the distributor to keep food on the shelves or in the butcher shop for a longer time — or perhaps indefinitely, without spoiling — or which otherwise make a contribution to easier handling or less care about control of temperature and humidity, in the process of manufacture, or in storage.

Consumers' Research has for many years warned subscribers that the U.S.D.A. work is primarily to improve the farmers' yield of produce and that it too often overlooks the consumer's stake in the matter. Back in the 1930's we repeatedly warned of the dangers to consumers from fruits and vegetables contaminated with lead and arsenic spray residues from lead and arsenic compounds which at that time were highly recommended by the U.S.D.A. for use as insect sprays. The number of deaths and serious illnesses resulting from the eating of arsenic- and lead-sprayed fruits and vegetables piled up to such an extent that proper control measures were finally instituted. The original reason for looking into the need for control measures, it should be noted, was the fact that U. S. apples were being refused in foreign ports because of excessive arsenic and lead residues. Some time later it was found desirable to institute protective measures to counteract the fear of being poisoned which was tending to discourage consumers' purchases of fruits and vegetables.

Another striking case of government officials' neglect of public welfare that has been brought to public notice has been the permitted use of nitrogen trichloride for bleaching flour. Experiments by Sir Edward Mellanby, famous English nutritional researcher, indicated that running fits were produced in growing dogs when their diet included food made from flour that had been treated with this chemical. The technique had been in use in the U. S. for some 25 years before publicity regarding the Mellanby experiments brought the matter to public attention in 1947. The outcry of public indignation was so great that in spite of the fact that the Food and Drug Administration took the position that it had no authority under the food and drug law to forbid the use of this flour bleach, the bakers voluntarily agreed to abandon its use.

CR has also brought to the attention of subscribers from time to time the effect of phosphoric acid (found in soft drinks, including *Coca-Cola*) on the enamel of teeth. Experiments by Dr. Clive M. McCay of Cornell University and Naval Medical Research Institute investigators J. S. Restarski and R. A. Gortner, Jr., showed that the teeth of experimental animals were dissolved to the gum line if rats were well fed for a period of six months but given nothing to drink but *Coca-Cola*. It is a curious reflection on the mental processes of public health authorities that they urge the addition of fluorine to public drinking water in order to improve children's teeth, on one hand, and on the other hand do nothing whatever about the matter of children's being supplied great quantities of beverages and other products that have been demonstrated to be ruinous to the enamel of their teeth.

There has been considerable protest in chemical journals and by chemists that to prevent the use of chemicals in food by government regulation would stifle scientific progress, but from the consumer's point of view the most desirable policy is obviously to place the burden of proof upon anyone who proposes to use a new and untried substance in connection with food or food preparation to demonstrate beyond any reasonable doubt that the product is without capacity to harm human beings or animals, on the basis of exhaustive tests conducted by impartial consultants and laboratories. The chemist who discovers a new chemical or develops a new use for it is not the person to pass on its wholesomeness or safety; he has a natural interest either financial or on a professional basis of seeing extensive use of the product or process which he has contrived. Questions of wholesomeness and safety should be reserved for the toxicologists, a profession in which there are all too few practitioners at the present time. Toxicology, it must also be admitted, is one of the weakest branches of modern science, and it has not kept pace with many other fields of biological science.

In developing a new use for a product that goes into the food supply, long and extensive testing needs to be done so that the scientists can with certainty come to the conclusion, over *a period of observation of many test animals over several gen-*

erations, that the product can be reasonably expected to be free from potentially poisonous effects on human beings. Admittedly, such multiple long-time experiments are very expensive. It is essential also to conduct the experiments on a variety of test animals since, for example, it has been found that one particular chemical may produce illness in dogs and cats but have no effect whatever on rabbits. The rat and the hamster are the animals now most used for testing of food substances, but it by no means follows that a food found relatively harmless to both of these animals will be without danger of causing any injury to human beings. Another factor to be taken into consideration is that the accumulation of small amounts of lead, arsenic, and other widely used insecticide materials may cause a slow poisoning process over a long period of ingestion. Minute traces of DDT in the milk supply might not under short-term test conditions cause poisoning, but when small amounts of DDT in milk are combined with possible intake from other sources, on fruits and vegetables, for example, there may be a cumulative effect that will cause, if not death, at least ill health as years go by.

Just what the consumer can do to protect himself under the circumstances it is difficult to say. It is CR's position, as we have indicated in a statement to the House Committee, that no chemical or additive material should be permitted to be used by the food manufacturers and producers until comprehensive evidence has been presented to federal and state food and drug administrations on the basis of careful and detailed work of independent and unbiased investigators (not the manufacturers themselves or their employees) that the product involves no risk of harm to the consumer, whether child or adult, healthy person or invalid. Possibly the same requirements of precertification should apply to chemicals added to foods as is now required with respect to food dye materials, which for many years have been subject to federal control *before* distribution to the food, beverage, and cosmetic industries is permitted.

Consumers can secure some idea of what the problem is by making it a point to read the ingredients on the label of all commercial food and beverage products which they purchase. It may not be entirely scientific, but the person who wishes to take no chances will be wise to avoid buying any product which contains a substance with which he is completely unfamiliar. The fact that a chemist invented and named the substance, and that some manufacturers use it in their products, is no guarantee whatever that the material may be safely consumed by people of all ages and in all states of health. It is a sound principle, too, to avoid all highly artificial and attractively presented foods, such as sulphurized dried fruits, and highly colored and artificially flavored drinks, sauces, syrups, and toppings.

This is indeed an age of science, and there is much talk of developing in time synthetic foods, pills, and potions which will replace our natural and accustomed foods. It is wise to bear in mind, however, that such suggestions are likely to receive publicity out of all proportion to their importance, in press reports of scientific societies' conventions, where more sober and matter-of-fact research may go unnoticed.

As Dr. Paul B. Dunbar, Commissioner of the Food and Drug Administration, in August 1949 commented, "When man starts competing with nature in the blending of food elements he should be sure that his formula does not bear the skull and cross bones." It is clear that the problem has in the last two or three decades become so complex and the utilization of little known and superficially studied ingredients has become so extensive that the time has come to take stock of the whole subject. Adequate measures should be initiated to prevent the indefinite extension of the use of chemical additives in our food supply. We have gone too far in the direction of tolerating new and untested ingredients on too great a scale. There has been no serious evidence offered that the development of chemistry in this country will be retarded by restricting the use of untried and incompletely tested chemicals in foods and beverages, and the possibilities of improvement in the health of consumers by insistence upon a high degree of restraint in the use of new materials promise to be very great indeed.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF Consumers' Research Bulletin published monthly at Washington, N.J., and Easton, Pa., for September 1950-September 1951. 1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Consumers' Research, Inc., Washington, N. J.; Editor, F. J. Schlink, Washington, N. J.; Managing editor, none; Business manager, Charles D. Cornish, Washington, N. J. 2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.) Consumers' Research, Inc., a non-profit corporation, not a business enterprise, not operated for profit; Washington, New Jersey. Stock, none. 3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None. 4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner. C. D. Cornish. Sworn to and subscribed before me this twenty-fourth day of September, 1951. Marian S. Allen [Notary Public]. (My commission expires September 2, 1952.)

RATINGS of MOTION PICTURES

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Cue, Daily News (N.Y.), *The Exhibitor, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency Lists, Newsweek, New York Herald Tribune, New York Times, Parents' Magazine, Release of the D.A.R. Preview Committee, Reviews and Ratings* by the Protestant Motion Picture Council, *Successful Farming, Time, Times Herald* (Washington, D.C.), *Variety* (weekly), *Weekly Guide to Selected Motion Pictures* (National Board of Review of Motion Pictures, Inc.).

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Technicolor, Cinecolor, Trucolor, Magnacolor, Vitacolor, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
sci—science fiction
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
—	2	5	**According to Mrs. Hoyle**	*mel A*
2	6	6	**Ace in the Hole**	*mel A*
—	5	7	**Alice in Wonderland (Bunin)**	*fan-c AYC*
3	9	6	**Alice in Wonderland (Disney)**	*mus-car-c AYC*
—	4	10	**Along the Great Divide**	*wes AYC*
3	3	—	**American in Paris, An**	*mus-com-c A*
2	4	—	**Angels in the Outfield**	*fan AYC*
—	9	4	**Apache Drums**	*wes-c AYC*
—	—	5	**Appointment with Crime**	*cri-mel A*
—	13	1	**Appointment with Danger**	*cri-mel A*
—	6	9	**As Young as You Feel**	*com A*
—	2	1	**Bannerline**	*soc-dr AYC*
—	3	1	**Basket Ball Fix, The**	*soc-dr AYC*
—	3	—	**Behave Yourself**	*com A*
—	10	4	**Best of the Badmen**	*wes-c AYC*
—	4	3	**Big Gusher, The**	*mel AYC*
2	1	—	**Blue Veil, The**	*dr A*
—	2	2	**Bonanza Town**	*mus-wes AYC*
2	9	6	**Brave Bulls, The**	*dr A*
4	10	1	**Bright Victory**	*war-dr AYC*
2	4	—	**Browning Version, The**	*dr A*
3	12	1	**Bullfighter and the Lady**	*dr A*
2	14	—	**Captain Horatio Hornblower**	*war-mel-c AYC*
—	1	7	**Casa Manana**	*mus-com A*
2	9	3	**Cattle Drive**	*wes-c AYC*
—	8	4	**Cavalry Scout**	*wes-c A*
—	—	8	**Chain of Circumstance**	*dr A*
—	3	5	**China Corsair**	*cri-mel A*
—	6	9	**Circle of Danger**	*mys-mel AYC*
—	4	9	**Comin' Round the Mountain**	*com A*
—	1	4	**Corky of Gasoline Alley**	*com AYC*
—	3	6	**Criminal Lawyer**	*cri-mel A*
—	—	3	**Crossroads of Passion**	*war-mel A*
—	5	3	**Crosswinds**	*adv-c A*
—	2	4	**Cuban Fireball**	*mus-mel A*
—	1	4	**Cyclone Fury**	*mus-wes AYC*
—	2	5	**Dakota Kid, The**	*wes AYC*
—	—	5	**Danger Zone**	*mys-mel A*
—	1	5	**Darling, How Could You!**	*com A*
4	7	5	**David and Bathsheba**	*dr-c A*
3	6	1	**Day the Earth Stood Still, The**	*sci A*
—	5	10	**Dear Brat**	*com A*
—	3	1	**Desert Fox, The**	*war-dr A*
—	3	2	**Disc Jockey**	*mus-com AYC*
—	1	5	**Doctor, Beware!**	*com A*
—	4	1	**Dream Ballerina**	*dr AYC*
2	9	2	**Emperor's Nightingale, The**	*fan-c AYC*
—	2	1	**Exchange Girl**	*com AYC*
1	11	5	**Excuse My Dust**	*mus-com-c AYC*
—	4	8	**Fabiola**	*hist-mel A*
—	4	8	**Fat Man, The**	*cri-mel A*
—	5	3	**Father Takes the Air**	*com AYC*
—	3	6	**Fighting Coast Guard, The**	*war-mel AYC*
1	10	1	**First Legion, The**	*dr A*
—	5	10	**Five**	*dr A*
1	6	2	**Flying Leathernecks**	*war-mel-c AYC*
—	14	4	**Follow the Sun**	*biog-dr A*
—	4	4	**Footlight Varieties**	*mus-com A*
—	11	4	**Force of Arms**	*war-dr A*
—	1	3	**Fort Dodge Stampede**	*wes AYC*
—	2	4	**Fort Savage Raiders**	*mus-wes A*
—	9	4	**Fort Worth**	*wes-c A*
—	9	7	**Four in a Jeep**	*war-mel A*
2	11	3	**Francis Goes to the Races**	*com AYC*
2	13	—	**Frogmen, The**	*war-mel AYC*
—	—	6	**Fugitive Lady**	*mel A*
—	3	1	**Gay Lady, The**	*mus-com-c A*
—	2	5	**Ghost Chasers**	*mel AYC*
—	3	2	**G.I. Jane**	*mus-com AYC*
3	12	1	**Go for Broke**	*war-dr AYC*
6	4	2	**God Needs Men**	*dr A*
—	3	1	**Golden Horde, The**	*adv-c A*
—	7	8	**Goodbye My Fancy**	*dr A*
4	10	2	**Great Caruso, The**	*mus-biog-c AY*
—	2	5	**Gunplay**	*wes AYC*
—	4	12	**Guy Who Came Back, The**	*dr A*
—	3	3	**Gypsy Fury**	*dr A*
—	5	9	**Half Angel**	*com-c A*
—	10	4	**Happy Go Lovely**	*mus-com-c AYC*
—	9	6	**Hard, Fast and Beautiful**	*dr A*
1	8	8	**He Ran All the Way**	*mel A*
—	6	2	**Heart of the Rockies**	*mus-wes AYC*
—	2	6	**Her First Romance**	*com AY*
—	1	4	**Her Panelled Door**	*war-dr A*
2	6	2	**Here Comes the Groom**	*com A*
—	2	1	**Highly Dangerous**	*war-mel AYC*
—	5	1	**Highwayman, The**	*adv-c A*
—	5	—	**Hills of Ireland**	*doc-c AYC*
—	2	1	**Hills of Utah**	*mus-wes AYC*
—	4	10	**His Kind of Woman**	*mel A*
—	10	5	**Hollywood Story, The**	*cri-mel A*
—	2	4	**Home Town Story**	*dr AYC*
—	1	8	**Hoodlum, The**	*cri-mel A*
—	2	2	**Hotel Sahara**	*war-com A*
—	—	4	**Hurricane Island**	*adv-c AYC*
1	11	4	**I Was a Communist for the FBI**	*mel AYC*
—	6	7	**I Was an American Spy**	*mys-mel A*
—	4	3	**In Old Amarillo**	*mus-wes AYC*
—	7	10	**Inside the Walls of Folsom Prison**	*mel A*
—	2	4	**Insurance Investigator**	*cri-mel A*
—	4	4	**Interrupted Journey, The**	*mel A*
—	6	7	**Iron Man**	*mel A*
—	—	—	**Isle of Sinners (see God Needs Men)**	

A	B	C		
3	10	—	**Jim Thorpe, All American**	*biog A*
—	2	1	**Joe Palooka in Triple Cross**	*com AYC*
—	1	4	**Journey Into Light**	*dr A*
—	6	4	**Jungle Headhunters**	*trav-c A*
—	4	5	**Katy Did It**	*com A*
—	2	3	**Kentucky Jubilee**	*mus-com A*
—	11	4	**Kind Lady**	*mys-mel A*
5	10	2	**Kon-Tiki**	*doc AYC*
—	2	3	**Krakatit**	*sci A*
—	4	2	**Lady and the Bandit, The**	*adv A*
—	9	4	**Last Outpost, The**	*mel-c A*
—	7	8	**Law and the Lady, The**	*mel A*
—	4	2	**Let's Go Navy**	*com AYC*
—	2	6	**Lilli Marlene**	*war-mel A*
—	1	2	**Lion Hunters, The**	*adv AY*
—	4	5	**Little Big Horn**	*wes A*
—	3	10	**Little Egypt**	*mel-c A*
—	10	3	**Lorna Doone**	*nov A*
—	2	3	**Lost Continent**	*sci A*
—	5	7	**Ma and Pa Kettle Back on the Farm**	*com AYC*
—	3	6	**Magic Face, The**	*war-dr A*
—	3	5	**Man from Planet X, The**	*sci AYC*
—	6	7	**Man with My Face, The**	*cri-mel A*
—	—	3	**Maniacs on Wheels**	*mel A*
—	4	2	**Marie of the Port**	*dr A*
—	4	8	**Mark of the Renegade**	*mel-c A*
—	11	3	**Mask of the Avenger**	*adv-c AYC*
—	—	3	**Mask of the Dragon**	*mys-mel A*
2	5	4	**Medium, The**	*mus-dr A*
2	7	7	**Meet Me After the Show**	*mus-com-c A*
—	2	1	**Mill on the Po**	*dr A*
—	1	6	**Million Dollar Pursuit**	*cri-mel A*
—	4	5	**Millionaire for Christy, A**	*com A*
—	3	3	**Minne**	*dr A*
—	7	3	**Mister Drake's Duck**	*com A*
—	6	1	**Mob, The**	*cri-mel A*
1	7	8	**Mr. Belvedere Rings The Bell**	*com A*
—	1	9	**Mr. Imperium**	*mus-dr-c A*
—	5	2	**Mr. Peek-A-Boo**	*com A*
—	3	2	**Mussorgsky**	*mus-biog-c A*
—	2	2	**My First Love**	*dr A*
—	—	8	**My Outlaw Brother**	*wes A*
—	2	8	**Native Son**	*dr A*
3	2	—	**Nature's Half Acre**	*doc-c AYC*
—	2	3	**Naughty Arlette**	*com A*
—	—	9	**Never Trust a Gambler**	*cri-mel A*
1	5	5	**New Mexico**	*wes-c A*
1	5	7	**Night Into Morning**	*dr A*
2	6	—	**No Highway in the Sky**	*mel A*
—	5	4	**No Place for Jennifer**	*dr A*
—	8	8	**No Questions Asked**	*mys-mel A*
—	1	4	**Obsessed**	*mys-mel A*
—	2	3	**Oh, Amelia**	*com A*
6	7	—	**Oliver Twist**	*nov A*
3	8	3	**On Moonlight Bay**	*mus-com-c AYC*
—	3	4	**On the Loose**	*dr A*
2	10	5	**On the Riviera**	*mus-com-c A*
—	8	2	**Painted Hills, The**	*mel-c AYC*
—	2	2	**Painting the Clouds with Sunshine**	*mus-com-c A*
—	—	5	**Pandora and the Flying Dutchman**	*fan-c A*
—	—	8	**Pardon My French**	*com A*
—	7	5	**Passage West**	*wes-c A*
—	3	13	**Peking Express**	*mel A*
—	7	7	**People Against O'Hara, The**	*mel A*
3	8	3	**People Will Talk**	*dr A*
—	8	6	**Pickup**	*dr A*
—	2	4	**Pier 23**	*cri-mel A*
—	4	4	**Pistol Harvest**	*wes AYC*
6	9	2	**Place in the Sun, A**	*dr A*
—	7	3	**Pool of London**	*soc-mel A*
—	2	3	**Prince of Peace, The**	*dr-c AYC*
—	11	5	**Prince Who Was a Thief, The**	*adv-c A*
—	6	10	**Prowler, The**	*cri-mel A*

A	B	C		
—	6	2	**Queen for a Day**	*dr A*
—	1	3	**Rats of Tobruk, The**	*war-dr A*
1	3	3	**Red Badge of Courage, The**	*war-dr A*
—	1	3	**Reluctant Widow, The**	*adv A*
1	12	1	**Rhubarb**	*com A*
1	9	5	**Rich, Young and Pretty**	*mus-com-c A*
—	1	2	**Rivals, The**	*doc AYC*
3	5	3	**River, The**	*dr-c A*
—	2	4	**Roadblock**	*cri-mel A*
—	5	2	**Rodeo King and the Senorita**	*mus-wes A*
—	2	2	**Saddle Legion**	*wes AYC*
—	9	3	**Santa Fe**	*wes-c AYC*
2	10	1	**Saturday's Hero**	*dr A*
—	—	5	**Savage Drums**	*mel AYC*
—	10	5	**Sealed Cargo**	*war-mel AYC*
—	9	5	**Secret of Convict Lake**	*cri-mel A*
1	2	5	**Secret of Mayerling, The**	*dr A*
—	2	4	**Secrets of Monte Carlo**	*cri-mel AYC*
7	8	2	**Show Boat**	*mus-dr-c A*
—	4	3	**Silver Canyon**	*wes-c A*
—	4	4	**Silver City Bonanza**	*mus-wes AYC*
—	6	11	**Sirocco**	*war-mel A*
—	2	1	**Skipalong Rosenbloom**	*com AYC*
—	2	7	**Smuggler's Gold**	*cri-mel AYC*
—	3	12	**Smuggler's Island**	*mel-c A*
—	4	3	**Snake River Desperadoes**	*wes AYC*
1	4	9	**Sound of Fury, The**	*cri-dr A*
—	3	2	**St. Benny the Dip**	*dr A*
4	8	4	**Strangers on a Train**	*cri-mc A*
5	2	4	**Streetcar Named Desire, A**	*dr A*
—	8	9	**Strictly Dishonorable**	*com A*
—	3	4	**Strip, The**	*mus-mel-c A*
—	3	2	**Submarine Command**	*war-dr A*
—	3	2	**Sunny Side of the Street**	*mus-com-c AYC*
1	8	10	**Take Care of My Little Girl**	*dr-c A*
4	9	4	**Tales of Hoffman**	*mus-dr-c A*
—	5	4	**Tall Target, The**	*mel AYC*
—	5	3	**Tarzan's Peril**	*mel AYC*
3	9	4	**Teresa**	*dr A*
—	4	—	**Texas Carnival**	*mus-com-c A*
—	9	1	**Texas Rangers, The**	*wes-c AYC*
—	12	6	**That's My Boy**	*com A*
—	—	4	**They Were Not Divided**	*war-dr A*
—	10	3	**Thing from Another World, The**	*sci A*
3	2	1	**This is Korea**	*war-doc-c AYC*
—	6	7	**Three Steps North**	*mel A*
—	4	3	**Thunder in God's Country**	*mus-wes AYC*
—	6	3	**Thunder on the Hill**	*mys-mel A*
—	4	10	**Tokyo File 212**	*war-mel A*
—	4	7	**Tomorrow is Another Day**	*cri-mel A*
—	10	—	**Tony Draws a Horse**	*com A*
—	1	3	**Treasure, The**	*com A*
—	—	—	**Try and Get Me (see Sound of Fury, The)**	
—	—	5	**Two Gals and a Guy**	*com AYC*
—	3	7	**Two of a Kind**	*cri-mel A*
—	1	5	**Victors and the Vanquished, The**	*war-dr A*
—	—	3	**Vienna Blood**	*mus-com A*
—	—	4	**Volcano**	*dr A*
—	10	—	**Warpath**	*mel-c A*
3	3	3	**Well, The**	*soc-dr A*
—	—	6	**Wells Fargo Gunmaster**	*wes AYC*
1	5	2	**When I Grow Up**	*dr AYC*
—	3	4	**When the Redskins Rode**	*wes-c A*
—	6	1	**When Worlds Collide**	*sci-c A*
—	4	3	**Whirlwind**	*mus-wes-c AYC*
1	6	4	**Whistle at Eaton Falls, The**	*soc-dr AY*
—	—	5	**Wicked City, The**	*dr A*
—	3	3	**Women Without Names**	*war-dr A*
—	4	2	**Wonderful Times**	*doc A*
—	3	2	**Wooden Horse, The**	*war-mel A*
—	3	1	**Yes Sir, Mr. Bones**	*mus-com AYC*
—	5	1	**You Never Can Tell**	*fan AYC*
—	1	5	**Yukon Manhunt**	*mel AYC*

The Consumers' Observation Post

(Continued from page 4)

has undergone a previous period of body protein depletion. Translated into daily menu terms, the 150 grams would amount to something like two 6-oz. portions of lean beef, 2 eggs, 5 slices of enriched bread, two 8-oz. glasses of milk, 1 cup of cooked oatmeal, 4 servings of vegetables, 2 servings of fruit, and 2 servings (1/4 cup each) of cottage cheese. Serving a meat dish or meat sandwich as a mid-morning or mid-afternoon snack will still further step up the supply of protein needed for repair of body tissues.

* * *

SYNTHETIC DETERGENTS used in ever-increasing quantities in the household are causing no end of trouble for sewage disposal plants. It's that "rich, foamy, lather" that is the main difficulty, reports Soap and Sanitary Chemicals. The magazine points out that the simple solution of the problem would be to present the convincing evidence that is available showing that lather is not a measure of the cleansing ability or a characteristic that goes with cleansing power in synthetic detergents. The editor admits, however, that it is difficult to unsell the homemaker on the desirability of a "nice, foamy lather" that she has come to associate with soap as an indication of its effectiveness in washing.

* * *

NEW OR NEWLY TESTED:

Faucet-Queen, Model A (The Faucet-Queens, Inc., Chicago), 49 cents at F. W. Woolworth stores. This faucet spray consists of a metal strainer built

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into a flexible green rubber casing that is easily attached to a sink faucet. It has a lever that is shifted to produce either a spray or a stream of water. It was found to be easy to install on smooth faucets with a diameter of 3/4 inch or less, but it would not fit on hose-threaded faucets or mixer faucets with a diameter of approximately 1 inch. With the flexible casing and normal water pressure, it is easy to direct a spray of water to any desired area in the sink. The Faucet-Queen is considered worthy of a B-Intermediate rating.

Kwik-Thred, automatic needle threader and sewing kit (Distributed by Streamline Button Co., 234-242 W. 39 St., New York 18), $1.98 at department store notion counters. The outfit consists of a needle threader, with 4 spools of thread, a thimble, and a cork, in a plastic case. The needle threader was found easy to use. The thread is slipped under two small clamps, and a cork used to hold the needle in place, eye up, on the shuttle. A simple push-pull motion operates the tiny hook which catches the thread and pulls it through the needle's eye. The threader worked satisfactorily for "sharps" in sizes 3 to 9. For those who have difficulty threading needles, it should prove to be a handy gadget, although it is somewhat high in price.

Lee Stainproof Skirt, treated with Terson (Lee Skirt Co., 1010 Race St., Philadelphia) Skirt in navy blue, serge-like weave, size 9, was purchased from a Philadelphia department store at $3.98. It was marked "rayon" and carried a tag that read "Fabric treated with Terson, durable spot and wrinkle repellent, laboratory approved and controlled." The skirt wrinkled in wear, and the wrinkles did not disappear when the skirt was hung up overnight. For the first three weeks, the wearer reported that fuzz came off the skirt on her slip which could only be brushed off with difficulty. The skirt was subjected to four dry cleanings and sixteen days' wear, after which it began to show signs of wear. The skirt stretched in the warp direction about two inches with the first dry cleaning and the hem became uneven. (Additional stretching was negligible.) Nine different types of spots were removed effectively, but seven other types did not come out completely. There would seem to be no particular inducement to buy this particular skirt over any other make, treated or untreated. The skirt label carried the claim: "Terson tags or labels are awarded only to merchandise made from approved fabrics," but it is obvious that the term "approved" needs careful defining if the consumer is to put reliance on its implied promise. The proposed American Standards for Rayon remain the consumer's surest guide to quality, and she should demand that the rayon garments she buys carry a tag indicating that they comply with these specifications.

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PHONOGRAPH RECORDS

BY WALTER E. GRUENINGER

Please Note: In the ratings AA indicates highly recommended; A, recommended; B, intermediate; C, not recommended. Although nearly all new releases of serious music are heard, space narrows comment, generally, to items which merit high ratings.

Beethoven: *Symphony No. 7.* Philharmonic-Symphony Orchestra of N.Y. under Walter. Columbia LP 4414. $5.45. One of the greatest symphonic works, which Wagner called "the apotheosis of the dance." Bruno Walter's interpretation is relaxed, leisurely, affectionate and mellow — perhaps too much so for some listeners. Rich-sounding recording. Overall, equals the Munch-Victor LP 1034. Neither, however, possesses the individuality of the older Toscanini performance, less well recorded, on Victor LP 1013.
Interpretation AA
Fidelity of Recording AA

Brahms: *Alto Rhapsody.* Marian Anderson (contralto) with the RCA Victor Symphony Orchestra under Reiner and the Robert Shaw Chorale of Men's Voices. 4 sides, RCA Victor Set WDM 1532. $2.83. Miss Anderson's third recording of this sad work is her best. Excellent support from orchestra and chorus. Well recorded.
Interpretation AA
Fidelity of Recording AA

Brahms: *Piano Quartet in A Major* (Op. 26). Albeneri Trio with Hillyer. Mercury LP 10090. $4.85. Richly romantic, lyric piano quartet by the young Brahms. The playing is firm and accurate but not great. Recording possesses a cold, piercing quality (too common in Mercury releases) which is remedied somewhat by turning down the high-frequency control. Most enjoyable of a new batch of Mercury releases.
Interpretation A
Fidelity of Recording A

Copland: *Concerto for Clarinet and String Orchestra.* Benny Goodman and the Columbia String Orchestra under the Composer & *Quartet for Piano and Strings.* The New York Quartet. Columbia LP 4421. $5.45. New works by "the most played and most honored of living American born composers" recorded for the first time. Sensitive, intelligent, definitive performances and transparent, wide-range recording of the *Concerto* with a little more pinching and forcing of the high frequencies for the *Quartet.*
Interpretation AA
Fidelity of Recording A

Gershwin: *Porgy and Bess.* Winters, Williams, Matthews, Long, etc., under Engel. 6 sides, Columbia LP Set SL 162. $16.35. Gershwin's earthy Catfish Row opera is most successful where it approaches the musical comedy idiom but its half dozen top numbers certainly touch the American heart. Obviously, Columbia has lavished its resources on the production, for the Negro cast, including some of the members of the original Broadway production, could hardly be better. Particularly Lawrence Winters and Camilla Williams, the leads who hail from the N.Y. City Opera Company, have excellent voices and know the idiom. The recording is first rate and the whole set adds up to very near tops in the list of choice recordings released this year.
Interpretation AA
Fidelity of Recording AA

Handel: *Dettingen Te Deum.* Chancel Choir of the National Presbyterian Church, National Gallery Orchestra and Soloists under Bales. WCFM LP 6. $5.95. Handel composed this choral work to celebrate the victory of the British over the French at Dettingen in 1743. The power, drama, and excitement of the music are ably conveyed by the performers. Reproduced with strength and wide range.
Interpretation AA
Fidelity of Recording AA

Leoncavallo: *Pagliacci.* Tucker, Amara, Valdengo, etc., under Cleva. 4 sides, Columbia LP Set 113. $10.90. Thrilling masterpiece, among the most often performed of all operas. Though the set is presented as a Metropolitan Opera Association production, the best voices of the Met's Italian wing are not recorded. Tucker as Canio leads the procession, though he lacks polish, warmth, and fully convincing dramatic qualities. The other voices are uniformly fair but not in the class with singers of the Golden Age whose recorded excerpts from this opera may still be heard. The direction is crisp and the orchestra and chorus first rate. Wide-range recording with voices well forward and the orchestra full and round but slightly in the rear.
Interpretation A
Fidelity of Recording AA

Martinu: *Concerto for String Quartet and Orchestra.* Vienna Konzerthaus Quartet and Vienna State Opera Orchestra under Swoboda & *Serenade & Partita for String Orchestra.* Winterthur Symphony Orchestra under Swoboda. Westminster LP 5079. $5.95. Arresting, energetic music which appeals more to the head than the heart. Forcefully conducted and satisfactorily recorded.
Interpretation AA
Fidelity of Recording A

Ravel: *Daphnis et Chloe Suite No. 2 & La Valse.* INR Symphony Orchestra of Brussels under Andre. Capitol-Telefunken LP 8145. $3.98. Very likely the top works of Ravel — exquisite, sophisticated, beautifully orchestrated. The conductor and the instrumentalists present a precise, artistic performance. Brilliant recording.
Interpretation AA
Fidelity of Recording AA

Saint Saens: *Concerto No. 1.* Piatigorsky (cello) with the RCA Victor Symphony Orchestra under Reiner. 4 sides, RCA Victor Set WDM 1538. $2.83. Elegant, debonair work that provides a few moments of relaxation. Piatigorsky is in exceedingly good form and he gets superb support. The recording lacks bite and would benefit by being more forward.
Interpretation AA
Fidelity of Recording A

Beloved Schubert Songs. Marian Anderson (contralto). RCA Victor LP 98. $4.67. Outstanding lieder — "Ave Maria," "Die Forelle," "Death and the Maiden," etc., Miss Anderson sings with warmth, dignity, simplicity, and admirable artistry. Well recorded.
Interpretation AA
Fidelity of Recording AA

Negro Spirituals. Todd Duncan (baritone). Allegro LP 3022. $5.95. Eighteen spirituals on one disk represents an abundance, indeed. Duncan's approach is straightforward and sincere, in keeping with his material. Appropriate piano accompaniment. Good recording.
Interpretation AA
Fidelity of Recording A

OTHER LP'S HIGHLY RECOMMENDED
(for interpretation and for fidelity)

ALLEGRO — **Beethoven:** *Trio in E Flat Major* (Op. 3), Pasquier Trio on 3023.
CAPITOL — **Hindemith:** *Quartet No. 3* & **Prokofiev:** *Quartet No. 2.* Hollywood String Quartet on 8151.
COLUMBIA — **Schuman:** *Symphony No. III.* Philadelphia Orchestra under Ormandy on 4413.
HAYDN SOCIETY — **Haydn:** *Symphonies Nos. 43* and *50.* Chamber Orchestra of the Danish State Radio under Woldike on 1041.
RCA VICTOR — *Songs of the Prairie.* James Melton (tenor) on 101.
Tchaikovsky Waltzes. RCA Victor Symphony Orchestra under Reiner on 103.
WESTMINSTER — **Mozart:** *Sonatas K521* and *K497* for Four Hand Piano. Badura-Skoda and Demus on 5082.
Haydn, F. J.: *Divertimento in C Major* and *Marches.* London Baroque Ensemble under Haas & **Haydn, M.:** *Divertimento in C Major.* Pougnet, Whitehead, Merrett (violin, cello, bass) & **Boccherini:** *Flute Quintet in E Flat Major.* Adeney, Pougnet, etc., on 5080.
Pergolesi: *Concertos 1, 3, 4, 5.* Winterthur Symphony Orchestra under Ephrikian. Set 4001-2.